FEEDSTUFFS

The Weekly Newspaper for the Feed Industry

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USDA Officials Say Corn Disposition to Be Slow

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — Top responsible officials of the U.S. Department of Agriculture told Feedstuffs this week that disposition of corn into the market under the terms available under the feed grain bill will not be made in any volume which will cause violent fluctuations in the corn market.

These officials say that when, as and if they sell corn into the market to compensate for costs of the newer higher price support program, it will be gradual between this time and the beginning of new crop year Oct. 1.

Also, a responsible person said USDA would not redeem for cash corn acreage cutback certificates which are turned into the government and that all the redemptions will be made in kind.

It is understood that USDA has no authority to issue cash payments in advance of marketing grain represented by farmer participation, although statements have been made to the effect that payment will be advanced to producers in cash. (Also see accompanying story on feed grain program provisions.) Congress has not authorized funds for such expenditures.

This reporter was told that certificates turned into the government will be redeemed only in kind. (The USDA "fact sheet" said that CCC would act as marketing agent for the farmer and advance him cash.)

The certificates will be made out in terms of dollars and are negotiable. It is understood that a participating farmer could sell a certificate to a nearby elevator, for example, and obtain cash or grain. The elevator might pay above or below the face value, depending on what it thought grain might be worth when the certificate was turned in for redemption or sold to someone else. It is expected that there will be speculation in certificates.

Comments on the program came to this reporter voluntarily from of-

(Turn to CORN, page 93)

Protein Variation In Sorghum Poses Problem for Mills

MANHATTAN, KANSAS — A decline in average protein level of grain sorghum along with the wide variation in its protein content throughout the major producing states is posing a real problem for producers, grain marketing firms, feed manufacturers and dealers, and livestock and poultry feeders, according to Dr. Robert W. Schoeff, extension specialist in formula feeds, Kansas State University.

Agronomists say many factors are contributing to this change in protein content of grain sorghum. Rainfall and other weather factors, fertilization, type of soil, stage of maturity and varieties all have been mentioned. Research data are not avail-

(Turn to PROTEIN, page 96)

New General Mills Feed Facilities Set

MINNEAPOLIS — General Mills this week announced plans for three new formula feed milling and distribution centers in eastern U.S. areas. This brings to six the number of new feed centers announced in that region in the past 15 months.

The announcement was made by E. E. Woolley, company vice president and general manager of the feed division.

The three newest feed milling and distribution facilities will be at Pal-

(Turn to GENERAL MILLS, page 97)

1961 ANALYSIS TABLE IN THIS ISSUE

Feedstuffs' 1961 Feed Analysis Table, copyrighted by Charles H. Hubbell, Chicago, feed consultant, appears on pages 42-43 of this issue.

Reprints of this table and the notes which accompany it may be obtained from Reader Service Department, Feedstuffs, P.O. Box 67, Minneapolis 40, Minn. The price for single copies is 20¢. The price on orders of three to five copies is 10¢ each and in quantities of 10 or more the price is 5¢ each. Colleges and experiment stations will be furnished a reasonable number of reprints for their own use free of charge on request.

Production School Outlines Objectives, Including Research

KANSAS CITY—Feed Production School, Inc., took a major stride forward this week when the directors adopted formally a list of purposes and objectives.

At a special meeting in Kansas City March 28, the board approved a nine-point program which, when carried out, will establish definitions and standards, stimulate and coordinate research into feed technology problems, set up a permanent feed technology library and raise money from the industry for further research and the accomplishment of all the objectives.

(Turn to SCHOOL, page 8)

Trade Misgivings Over New Feed Program Push Downward on Nearly All Ingredients

By FRED E. TUNKS
Feedstuffs Staff

Misgivings about the intentions of the U.S. Department of Agriculture in carrying out the provisions of the new emergency feed grain bill brought great influences down upon a much cooler ingredient market.

But for the notable exception of soybean meal, ingredient prices dropped limply. This situation, according to comments collected from feed and ingredient men around the country, is primarily a result of fears of government sales of corn.

This week, too late to beat the slide, Dr. Willard Cochrane, chief economic advisor to Secretary of Agriculture Freeman, said USDA plans to market only enough surplus grain to keep corn prices at the present

(Turn to INGREDIENTS, page 93)

USDA Spells Out Feed Grain Plan Details

WASHINGTON—The U.S. Department of Agriculture has issued an official "fact sheet" on the objectives, the principles and the administrative details of the 1961 emergency feed grain program.

It is believed that spelling out of the program's provisions, signed into law last week by President Kennedy, will help erase at least some of the apparent attendant confusion within the grain and feed industry.

USDA, it seems, is aware of the confusion created by the "New Frontier" plan. Said Orville L. Freeman, secretary of agriculture, at Omaha last week: "I believe that the greatest danger to the success of this program would be a general lack of understanding of the way it works . . ." (See accompanying story.)

The following is a summary of what USDA says the new feed grain program is all about:

OBJECTIVES — Purposes of the program are as follows:

1. To increase farm income.
2. To prevent further buildup of the feed grain surplus and reduce it

(Turn to DETAILS, page 98)

Mississippi Company Organized for Volume Grain Purchasing

FOREST, MISS.—Mid-South Grain Co., Inc., has been organized here for volume purchasing of corn and other grain. Purpose of the tentatively named group is to purchase grains coming down the Mississippi River by barge to be cleaned and stored in grain bins which the newly formed company proposes to build in Vicksburg.

H. F. McCarty, Jr., of Magee, is chairman of the group, which includes poultry operators making feed. Stockholders already in the corpo-

(Turn to MISSISSIPPI, page 96)

Broiler Egg Set Up 27% Over Year Ago

SALISBURY, MD. — The national broiler egg set continues to skyrocket; each week a new record is set.

Hatcherymen in the 22 important broiler producing states last week set 61,967,000 eggs. This was 2% above the previous week and 27% above the

(Turn to BROILERS, page 96)

Spencer Kellogg Sales, Earnings Up

BUFFALO — Increased sales and earnings have been reported by Spencer Kellogg & Sons, Inc., for the quarter and for the first half year ended Feb. 25.

Earnings in the second quarter of the current fiscal year were 23¢ per share, substantially over the 9¢ per

(Turn to EARNINGS, page 96)

Pigs on Steel Mesh Outgain Pigs on Concrete, Illinois Says

URBANA, ILL.—A University of Illinois swine researcher reported this week that a series of 14 tests showed that pigs on steel mesh made 19.5% faster gains than pigs on concrete floors.

Speaking before the Illinois Swine Day audience, Dr. A. H. Jensen said that the test involved 728 pigs weaned at two to three weeks of age. All pigs, regardless of flooring, received the same rations and experi-

(Turn to PIGS, page 96)

FEEDSTUFFS *Features This Week*

SERVICEMAN'S ROLE—The role of the serviceman in combating condemnations is discussed in an article on **page 18.**

HAMMERMILL OPERATION—Factors affecting granulation and capacity in grinding corn, oats and sorghum grain are told. **Page 26.**

ANALYSIS TABLE—The 1961 Feedstuffs Analysis Table prepared by Charles H. Hubbell is presented on **page 42.**

BROILER CONTRACT—An Ohio firm reports success with its flexible broiler contract program. **Page 70.**

FDA REGULATIONS—Feed men's concern over FDA regulations is told in this article. **Page 72.**

ARSENICALS—An article on arsenicals in feeds and their residues in animal tissues may be found on **page 78.**

—REGULAR FEATURES—

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The regional circulation of this issue is concentrated in the southeastern states

Top of the Hopper

WHAT WILL THE NEW FEED GRAIN law do to the corn market? What it has done up to now can be read in the daily quotations, but its longer-range effect is a tough one to dope out, as almost anyone in the grain business will tell you. One astute market analyst was observed in Washington describing a thorough "if the farmers do this, then this will happen" evaluation to another interested citizen. He seemed quite confident that a reasonably accurate guess could be made on corn market trends. However, a couple of hours later he reported that his thinking had taken "a 180-degree turn."

A PROJECT OF IMPORTANCE to the entire feed industry has been undertaken by Feed Production School, Inc., sponsor of the annual production school in Kansas City. This is the preparation of definitions which, it is hoped, will lead to uniform terminology when referring to finished feeds, feeds in process and processing functions. A Production School committee has drawn up some tentative definitions. And now industry-wide participation in the project is being sought. And, it may be noted, those who help with the final definitions will be rewarded in a material way.

The Production School has announced a feed industry definitions contest in connection with the 1961 school. A $10 certificate, redeemable on the cost of Production School attendance this year, will be awarded to anyone who submits a definition that is adopted by the committee. (Details of the contest and some sample definitions will be found on page 10.)

THE PROBLEM OF GETTING Food and Drug Administration clearance on combinations of drugs under food additive regulations frequently is complicated by the fact that different drug manufacturers are involved in many cases and cooperative research programs can't always be worked out. A possible solution to such situations was suggested by an FDA official. "Why not ask the Department of Agriculture to conduct the necessary studies to obtain combination clearances?" he asked. If studies of this kind are necessary, and individual companies can't justify the expense of obtaining data to help sell another's product, USDA could logically step in to fulfill its role of assisting agriculture through its research facilities, he observed.

CONTRACT PRODUCTION is not now decried nearly so much as it once was, although there still are, of course, many strong independent producers in the poultry field. Speaking of contract production, a couple of recent comments are of some interest.

A livestock farmer in one breath was rapping integration and contracting in the animal and poultry area. In the next breath, he was telling how he was turning over some of his land to contract production of a vegetable crop because of a good and guaranteed return.

Some feed manufacturers have got into contract or strictly their own egg production because of bad debts, taking over part or all of an operation in order to recover some of their money and also maintain their feed business. Some of the producers who have gone on a contract basis after owing the feed company a good deal are said to be very pleased with the set-up. They get out from under much of the risk, get a fairly good return if they do a good job and are able to work on payment of past-due feed bills.

FRESHMAN CONGRESSMAN RALPH BEERMANN (R., Neb.), who is well known in the industry as a prominent alfalfa dehydrator when he's

(Turn to **TOP OF THE HOPPER**, page 99)

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

The term "spotty" best describes the formula feed business for this week and for the month of March. Business this week was reported as being mostly "unchanged" to "somewhat improved." As March came to an end, the month's tally sheet looked just as "spotty" as the week. Some manufacturers were well pleased with the month and others were disappointed.

Chick, turkey and swine starters were the bright spots in business this week. Cattle feeds were moving well due to contracts favorable to the buyer.

Soybean meal price advances averaged $3.60 a ton. However, corn and millfeeds were on the weak side. There was the feeling among some ingredient men that the effect of the government feed grain bill on corn prices was also being felt in other ingredients.

The wholesale feedstuff price index advanced 0.7 point during the week to 82.7. 1.7 points above a year earlier. The feed-grain index dropped 2.3 points to 60.4 compared with 67.4 a year earlier. The hog-corn ratio, based on Chicago prices, was 15.6 this week, up 0.4 from last week. This figure compared with 13.5 a year earlier. (Feed markets in detail on pages 94-95.)

Northwest

Feed business in the Northwest ranged from the slow side to good this week. The month of March was ending with equally as variable records as the week. Some manufacturers said the month would be slightly under a year ago while others said the month would be ahead of a year earlier.

There was some uneasiness among the feed men over the effects of the feed grain bill passed by Congress. It was felt by some that driving the price of corn down through the threat or actual dumping of CCC corn on the market would cause farmers to feed the corn rather than complete feeds. Ingredient men felt that the grain bill was responsible for an easy trend in millfeeds.

Beef, dairy and turkey feeds were moving well in this area. One manufacturer reported that egg mash business was disappointing since hatch figures on egg-type chickens had scared many people out of the egg market.

Prices were expected to be unchanged to up slightly due to the increase in soybean meal prices. However, some felt that the down trend in corn and millfeed prices might nearly even out the ingredient prices.

Southwest

For the past several weeks formula feed business in the Southwest has been reported as slightly better with a note of optimism being expressed for the ensuing week. That same situation still exists. The mills are generally running five days this week but some did not fill out the week's run until late in the week. Backlogs of orders for next week are scarce.

Hog feed sales are proving to be one of the best lines this week with pig starter business also improving but not up to expectations.

In some areas mixers were expressing disappointment in the progress of spring poultry business. Starter feeds in turkey, poultry and swine were making up a good portion of the running time at most mills. Mixers are still shipping cattle feed on old bookings, however, volume is slowing up some and new bookings were slow.

Ingredient prices were mixed with protein meals steady to stronger and millfeeds extremely weak. The weak corn market coupled with poor millfeed demand and a reasonably heavy flour run were the dominant causes of the lower millfeed market.

Northeast

March sales of formula feeds ended on a higher note. Although slight gains were made each week the month as a whole was a keen disappointment to the trade, and turnover was about 8% below year-ago levels.

It is apparent that a major shift in the trade's sales pattern to dairy concentrates is in the making. Although there was a slight trend to complete dairy feeds, the emphasis remained on concentrates to mix with grains on the farm.

One spokesman said although the new trend is hard on the big mixers' tonnage now, it is likely to spread sales more evenly over the calendar and they may wind up the year with

Southeast

Formula feed business is reported as being about unchanged. With the great number of broilers on feed, naturally the poultry feed business has to be reported as being very good. However, with the increased prices of feed ingredients and broilers selling at 16¢ lb., f.o.b. the farms, growers are lucky to come out on a break even basis.

Since the government action on selling surplus corn with good supplies already on hand and slow demand, corn prices dropped the first three days of this week 7¢ bu., making the delivered price to middle Georgia $1.26 bu.

Many feed mills have changed their formulas and are utilizing more cottonseed meal in their dairy feeds in the place of soybean meal as it can be bought about $14 per ton cheaper. As a result cottonseed meal prices advanced as much as $3 per ton this week. Loaded cars of soybean meal at southeastern producing mills are offered $2 to $3 per ton cheaper for quick shipment. The $5 drop in citrus pulp last week did not stimulate any greater movement due to the larger dealer stocks. Many believe it will be another two to three weeks before shipments improve. It is reported that there is some citrus pulp being offered at $32.50 f.o.b. Florida producing mills; however, it is reported to be of a very inferior quality.

South Central

Some feed mill officials see a few signs of an improvement in their business from the dull rate of the last few weeks. The gains are slight and are not taken as an indication that an important upturn is underway. They attribute a good share of the gains to a small rush of clean-up orders on cattle feed bookings due to expire at month end.

Hog feed volume is being maintained at much the same pace, while

(Turn to **MARKETS**, page 99)

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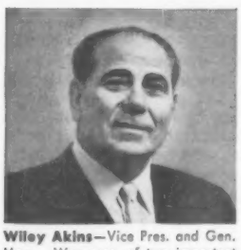

Wiley Akins—Vice Pres. and Gen. Mgr.— Was pres. of two important feed mfg. assns. 25 years' management experience in the feed industry.

Dr. R. A. Rasmussen—V.P., Research Director, Animal Div.—Served on faculty of 3 universities. Degrees in biochemistry and nutrition.

Dr. Myron W. Pasvogel—V. P., Dir. Research, Poultry Div.—Exper. in poultry, feed industries. Former Dir. Poultry Science Dept., U. of Ariz.

John R. Linsner—Dir. Tech. Services—Grad. U. of Ill. College of Agriculture. More than 12 years' exper. in all phases of feed formulation.

Richard W. Kerley—Coordinator of Sales, Production and Procurement. Degree in general agriculture. 12 years' experience in the feed industry.

Gerald J. Anderson—Tech. Services—M. S. degree in poultry nutrition. Was research technician at U. of Idaho and nutritionist in feed industry.

Dr. Heino Naelapaa—Coord. Spec. and Prod.—Was dir. of res. and nutr. in U.S. firms and abroad. Ph.D. nutr. and physiology, Bonn U., Germany.

Richard W. Kelley—Tech. Services—Was research asst. at U. of Mo. and at Kansas State. Master's degree in animal nutr., U. of Missouri.

Problem solving session—A Peter Hand customer (right) meets with Dr. Rasmussen for evaluation of his formulas and to discuss a palatability problem. Standing by is Harry White, Peter Hand Sales Mgr., with more than 20 years' experience in the feed and pharmaceutical fields.

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At GFDNA

Convention Probe Provides Sample of CSS Grain Plans

By GEORGE L. GATES
Editor of Feedstuffs

WASHINGTON—Grain warehousemen attending the Grain & Feed Dealers National Assn. convention in Washington last week were given a quick inventory of the new administration's approach to management of the nation's grain surplus by officials of Commodity Stabilization Service.

The session, which wound up the three-day convention, did not provide as detailed or perhaps as authoritative rundown on the situation as had been planned because last-minute substitutes appeared on the program in place of some officials with more direct responsibility for the grain storage program.

The latter—Horace Godfrey, CSS administrator, and Edward Jaenke, associate administrator—were sent out of town to help Orville Freeman, secretary of agriculture, sell the new feed grain support program.

Statements of the officials present provided some general reflections of how the new CSS first team has sized up its job and how it hopes to do it, but it appeared that some of the key plays were shipped out with the traveling squad. No specific description of the plans for administering the new feed grain program, in which industry men present were most interested, was provided.

Roland F. Ballou, assistant deputy administrator for CSS operations (the only scheduled speaker to appear), summed up by saying, "We are going to have some tight spots on storage and will do what we can to foresee these and take action to clear up local problems. We are not too concerned, though, and expect to have adequate space for loan takeovers and the new crop, although there are still too many unanswered questions on the new crop to know for certain."

He pointed out that the government had purchased no bins since 1956 and hopes to avoid further buying of bins. "We intend to use commercial storage to the fullest extent possible," he said, noting that 75% of the present inventory is stored in commercial warehouses. Also, he added later, "It is in your interest and in the interest of CSS that we utilize maximum storage in areas of production."

Mr. Ballou said the department expects to continue its present policy on sales of off-grade corn — selling when there is a demand for dry corn

(Turn to PROBE, page 96)

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GFDNA Reelects Charles Force; Policies, Plans for Year Set

WASHINGTON — Charles Force, Little Brothers, Kalamazoo, Mich., was reelected president of the Grain & Feed Dealers National Assn. at the organization's annual convention March 24.

All other officers also were reelected. They are: H. V. Nootbaar, first vice president, H. V. Nootbaar & Co., Pasadena, Cal.; S. Dean Evans, Sr., second vice president, Evans Grain Co., Salina, Kansas; Sam Rice, Jr., third vice president, the Rice Grain Co., Toledo, Ohio.

Other official convention business included approval of a set of "policy guidelines" as well as resolutions pertaining to specific proposals.

"This association aims to secure for the public the benefits of a competitive economy and expects its members to meet their responsibilities to the public under this system," the statement says. "We advocate a free market, limited-government approach to our nation's economic affairs because the competitive system has proved itself more capable than any other of delivering results to all people."

The association, under this policy, plans to operate in these general areas: Education and training of its members in understanding the values of the free market, fundamentals of political action, management of operations and direction of market facilities to maximize service to the economy, individual responsibility to operate competitively with integrity and profitably and to educate others to the values of the system.

Provide association services to help members meet these responsibilities.

Work with government agencies to promote free markets to serve the public interests and guide them in government programs to help make them practicable and workable.

Cooperate with other groups and individuals in formulating sound national policies affecting industry, agriculture and consumers.

Current Emphasis

Among the items listed in the statement as requiring special emphasis in 1961-62 were these:

Explore every possible avenue whereby competitive commercial grain distributing facilities may be used in the "food for peace" objectives of the U.S.

Recognize the industry obligation as an essential part of agri-business and participate fully in determination of legislation and programs that affect agriculture.

Cooperate with farmers in research and market development.

Urge the Commodity Credit Corp. to follow a policy of utilizing custo-

(Turn to ELECTION, page 97)

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Grain Sanitation Needs Examined

WASHINGTON — The importance of maintaining a rigid sanitation program in and around grain warehouses was emphasized at a meeting of the national grain sanitation committee, held during the annual convention of the Grain & Feed Dealers National Assn. here March 22.

Alvin E. Oliver, executive vice president of the association, presided at the meeting. He pointed out that "sanitation is the greatest element of risk in warehousing." He predicted a stepped-up inspection program by regional offices of the Food and Drug Administration and said that a preventive maintenance program would be much less expensive than facing possible legal action as a result of condemnations by FDA inspectors.

Mr. Oliver also reviewed the inability of the grain warehouse and seed trades to agree on legislation which would require that chemically treated seed grain be identified with a dye. In the absence of such laws, Mr. Oliver said, "About the only sure protection a grain receiver has against 'plugged grain' is a sharp-eyed man at the truck dump."

The operation of the California Grain Sanitation Council was described in detail at the meeting and it was agreed that a program of this type had many features which could be put into operation by other state associations.

Feed Grain Support Prices Announced

WASHINGTON—Secretary of Agriculture Orville L. Freeman last week announced the following advance national average support prices for feed grains:

Corn—$1.20 bu. average for all grades.

Barley—93¢ bu. for grade No. 2 or better.

Grain sorghum—$1.93 cwt. for grade No. 2 or better.

Oats—62¢ bu. for grade No. 3.

Rye—$1.02 bu. for grade No. 2 or better or grading No. 3 on test weight only.

Under provisions of the emergency one-year feed grain program, Secretary Freeman has determined that farmers in order to be eligible for support on any of the feed grains from 1961 production must reduce their corn and grain sorghum acreage by at least 20% from their average acreage of 1959 and 1960.

Corn and grain sorghum producers who cooperate in the emergency feed grain program will be eligible for price support on their normal production from the acreage planted to these two crops, and for support on barley, oats and rye at the new levels.

Producers of barley, oats and rye who do not produce corn or grain sorghum will be eligible for support on their 1961 production of these crops.

Producers of corn and grain sorghum who do not cooperate in the emergency feed grain program will not be eligible for support on any of the five feed grain crops.

The support prices for barley, oats and rye were set directly at the feeding value in relation to corn, and the support price of grain sorghum was set at 90% of the feed value in relation to corn. The support price of grain sorghum at $1.93 cwt. will keep it in a more competitive relationship to corn prices, officials said.

Support prices for 1960-crop feed grains were set at $1.06 bu. for corn, 77¢ bu. for barley and $1.52 cwt. for grain sorghum. 50¢ bu. for oats and grain sorghum, 50¢ bu. for oats and 90¢ bu. for rye.

Omaha Feed Club Plans

OMAHA — Baseball, Dodger style, will occupy members of the Omaha Feed Club at their meeting April 10 at the Ranch Bowl here.

After dinner, clubbers will hear from the managers of the Omaha Dodgers, Triple-A farm club, which begins its first playing season here in April.

Elten Schiller, general manager, and field manager Danny Ozark will be on hand with color movies explaining the Dodgers' baseball operations.

Higher Oilseed Supports Set

WASHINGTON—Secretary of Agriculture Orville L. Freeman last week announced the following national average support prices for 1961-crop oilseeds:

Soybeans—$2.30 bu.

Flaxseed—$2.80 bu. for grade No. 1.

Cottonseed—$49 per ton basis grade (100) for loans on farm-stored cottonseed; $45 per ton basis grade (100) for purchases from producers with appropriate differences for purchases from ginners to reflect normal handling costs.

Secretary Freeman said, "The 1961 support price for soybeans has been increased 45¢ bu. from last year's support to gear production of this important oil crop into the 1961 emergency feed grain program and to meet anticipated needs.

"The 1961 support price for cottonseed, which also supplies important vegetable oil, is at a level competitive with soybeans.

"The new flaxseed support price is more realistic in relation to support prices for other crops, chiefly wheat, oats and barley that are grown in the flaxseed production area. There is need to check the recent trend toward flaxseed acreage reduction."

Sharp Dip Reported In Egg Markets

NEW YORK — During the week ended March 29, prices in the nation's egg markets were sharply lower on all grades and sizes, the U.S. Department of Agriculture reports. Large declined 1-5¢, mostly 3-5¢, mediums 1-5¢, smalls 2¢ to as much as 7½¢ lower at New York. Standards and checks were 3½-5¢ below levels of a week ago.

Pre-holiday demand was generally disappointing as compared to a year ago. Buyers throughout the nation attempted to limit purchases to known needs and a nervous and unsettled undertone prevailed, USDA said. At the close, however, some increase in buying activity was noted. Attractive feature sales by chain stores were noted in an effort to stimulate consumer buying interest. Some advertised U.S. Grade A large as low as 35¢ doz. in Midwest areas.

GENERAL MILLS DIVIDEND

MINNEAPOLIS—The board of directors of General Mills, Inc., has declared a dividend of 30¢ per share on General Mills, Inc., common stock payable May 1, 1961, to stockholders of record April 10, 1961. This is the 131st consecutive quarterly dividend on General Mills common stock.

USDA Sees Little Fall Rise in Egg Prices

WASHINGTON — Because of the continuing increase in the egg-type chick hatch, and consequently in the fall egg supply, there is likely to be a smaller seasonal egg price rise this fall than occurred in most other recent years, according to the poultry and egg situation report from the Agricultural Marketing Service of the U.S. Department of Agriculture.

USDA says the season's egg-type chick hatch is likely to be fully up to the 12% increase farmers stated in their February intentions and possibly greater.

The report notes that hatchery operations to date have considerably exceeded farmers' February intentions to raise 12% more replacement chickens than the 339 million raised in 1960. February hatchery output included 32% more egg-type chicks than last February and March 1 eggs in incubators totaled 26% more than last year, the report continued.

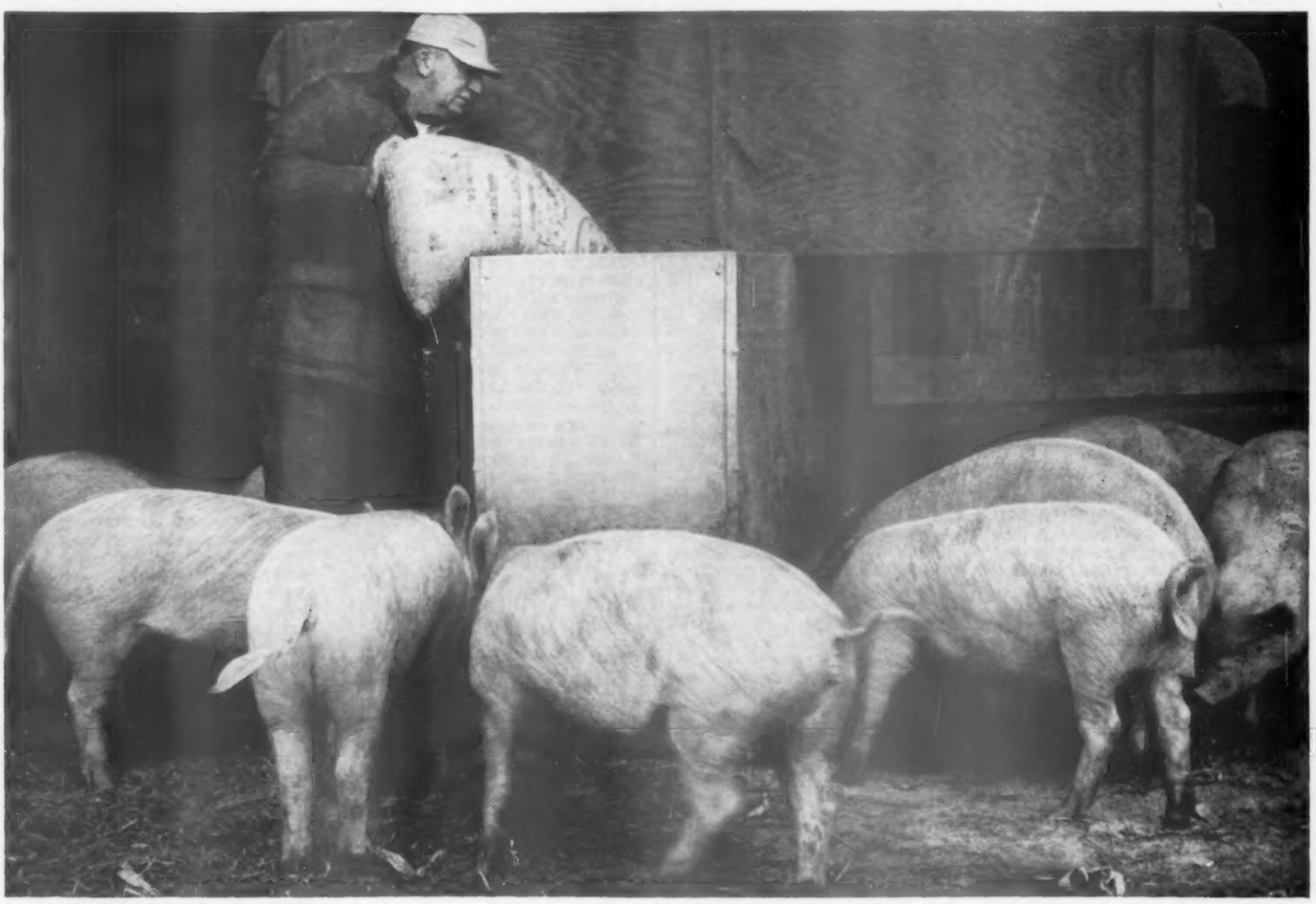
While the substantial increases have been widespread, it was noted that the greatest percentage increases have been in the west north central, south Atlantic and east south central states. While each of these regions had cut back sharply last year, the rebound for the two southern regions suggests a new net expansion that will continue the upward trend in commercial egg production in the South, the USDA report said.

Still Below 1959 Level

It was pointed out that if the hatch for all of March is in proportion to the number of eggs in incubators at the beginning of the month, on April 1 there would have been 38 million more egg-type chicks (about 30% more) hatched in 1961 than to the same date in 1960. However, it was stated that this would still leave the 1961 hatchery output below the large 1959 output. But, it would nevertheless indicate an uncomfortably large

(Turn to EGG PRICES, page 97)

ARE YOU GETTING YOUR DOLLAR'S WORTH OF SCOURS PROTECTION?



There are several products that will help prevent or treat outbreaks of scours (bacterial swine enteritis).

But, in all but one, the ratio between cost and effectiveness is out of line. The single exception is PRO-STREP.

PRO-STREP, an effective combination of penicillin and streptomycin, will help prevent scours at a lower cost than any other single antibiotic—narrow- *or* broad-spectrum! And, that's not all. PRO-STREP also helps stimulate appetites, promote growth and improve feed efficiency.

University tests have repeatedly demonstrated the value of a combination of penicillin and streptomycin in fortifying swine rations. The majority of published reports on this combination have been based on PRO-STREP.

That's why more and more progressive feed mills throughout the country are switching to PRO-STREP. What they want is what you want . . . an effective combination of antibiotics that can promote growth and help prevent "necro" at a lower unit cost. Merck Chemical Division, Merck & Co., Inc., Rahway, New Jersey.

The Best Antibiotic Combination... **PRO-STREP®** MERCK

Penicillin and Streptomycin

Reports on Broiler Condemnations Presented at Research Conference

WASHINGTON — Reports on field studies of broiler condemnations were presented from four areas of the country at the Research Conference on Disease, Environmental and Management Factors Related to Poultry Health.

The conference held March 20-22 at Jefferson Auditorium of the U.S. Department of Agriculture was sponsored by USDA's Agricultural Research Service and the University of Georgia.

Other reports at the meeting covered a variety of other factors related to poultry health.

(Summaries of reports on the role of USDA in seeing that wholesome poultry products are sold and the industry's problems in producing wholesome poultry products appeared in Feedstuffs March 25.)

SURVEY OF POULTRY CONDEMNATION—Dr. M. S. Cover, department of animal and poultry science, University of Delaware, reported on a cooperative survey of poultry condemnations taken by the universities of Maryland and Delaware.

He said that the following management factors influence the rate of broiler condemnations on the Delmarva peninsula:

(1) The use of only one stove for a large number of chicks tended to increase the rate of condemnation.

(2) Condemnations were less among broilers raised in narrow houses (4.39%) than in wide houses (6.98%).

(3) Houses with solid partitions between pens had condemnations averaging 3.32% while houses with open partitions averaged 7.87% condemnations.

(4) A definite sanitation plan such as litter removal and broiler house disinfection between flocks showed a reduction in condemnation rate. Of the washed and disinfected houses, 86% had less than 4% condemnation. Of the houses that were not washed and disinfected, only 63% had less than 4% condemnation.

(5) The average condemnation rate on flocks receiving the recommended vaccination program was 2.39% while flocks receiving other vaccination programs varied from 3.56% to as high as 9.23% condemnation.

Dr. Cover commented that the survey did not produce conclusive evidence, but that it did show trends which indicate that good management and disease control practices reduce condemnation rates.

He said that the industry under the stimulus of the university poultry specialists and extension service has started programs to reduce the disease incidence by observing more strict sanitation.

He stated that growers are now more careful about: (1) vaccination techniques, so that proper immunity is produced against current diseases; (2) dissemination of disease by farm-to-farm visitation; (3) proper care of birds in all periods of stress, and (4) use of more strict sanitation between flocks and in day-to-day management.

FIELD STUDIES OF BROILER CONDEMNATION LOSSES IN GEORGIA — Surveys involving over 3½ million broilers indicate that diseases, particularly respiratory diseases, in the presence of adverse environmental influences, directly affect the condemnation rates of broilers, said Dr. C. S. Schmittle, director, Poultry Disease Research Center, University of Georgia.

The respiratory diseases, in their order of importance, are: chronic respiratory disease (PPLO infection), infectious bronchitis and Newcastle disease, he stated. Infectious bronchitis and Newcastle disease usually occurred concomitant with CRD, Dr. Schmittle said. He stated that vaccination procedures did not dependably control the effects of these diseases.

He said the following conclusions were made from the surveys:

(1) Respiratory diseases are the most important factors related to broiler condemnations.

(2) Environmental (management) influences are related to high condemnations.

(3) The combination of adverse environmental (management and weather) conditions with the presence of disease resulted in the highest condemnations.

(4) The qualities which lead to good records also produce good poultry and less condemnation.

He cited records of the Georgia Poultry Laboratory on respiratory disease condemnations. Rates of condemnation were correlated with the disease incidence as follows: (1) infectious bronchitis, (2) Newcastle disease, (3) laryngotracheitis and (4) air sac disease—with air sac disease showing a direct relationship to less favorable weather conditions.

In this light, the following recommendations were offered:

(1) Establish PPLO-free stock.

(2) Initiate and maintain a disease prevention and control program specifically designed to control PPLO infection, infectious bronchitis, Newcastle disease and laryngotracheitis.

(Turn to CONDEMNATIONS, page 98)

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
January 21	1,125	530	586	622	51	743	1,940	2,283
January 28	1,143	468	832	596	112	739	1,919	2,299
February 4	1,161	402	878	641	98	921	2,040	2,380
February 11	1,133	524	897	707	106	855	2,070	2,400
February 18	1,195	412	949	765	122	816	2,013	2,220
February 25	1,191	402	956	743	102	767	1,939	2,427
March 4	1,184	414	710	819	99	843	2,115	2,076
March 11	1,170	404	908	777	130	722	2,092	2,046
March 18	1,229	468	928	854	80	749	2,138	2,186
March 25	1,242	434	861	893	101	842	2,172	2,427

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
January 21	977	517	3,432	351	5,963	255	3,159	2,384
January 28	1,118	406	3,479	325	6,127	256	3,466	2,507
February 4	1,040	375	3,659	290	6,783	270	3,672	2,724
February 11	1,199	369	3,834	400	7,211	260	4,032	3,020
February 18	1,195	462	4,099	395	7,521	238	4,188	2,979
February 25	1,026	529	3,984	422	7,655	223	4,404	3,085
March 4	973	465	3,895	480	7,668	227	4,649	2,860
March 11	1,238	510	4,008	404	7,681	259	4,737	2,952
March 18	1,327	600	4,112	449	7,739	279	4,954	2,958
March 25	1,465	649	4,304	433	8,441	257	4,951	3,371

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1961	Total 22 areas 1960
January 21	4,205	464	2,149	308	231	1,224	33,499	32,615
January 28	4,375	498	2,299	289	261	1,218	34,732	33,444
February 4	4,421	507	2,499	345	309	1,310	36,658	34,222
February 11	4,694	496	2,549	359	273	1,293	38,735	34,706
February 18	4,711	501	2,760	373	253	1,377	39,557	34,632
February 25	4,827	556	2,707	352	272	1,388	39,957	34,629
March 4	4,664	521	2,816	413	305	1,447	39,643	34,769
March 11	4,621	608	2,860	350	358	1,473	40,385	35,168
March 18	4,926	620	2,950	358	260	1,533	41,697	35,468
March 25	5,269	600	3,087	401	352	1,478	44,027	35,637

BULK FACILITY—This new bulk loading facility for trucks has been opened by Cooperative G.L.F. Exchange, Inc., at its mill in Albany, N.Y. The facility includes 32 10-ton bins over a 90 ft. platform scale. A similar unit has been in operation for some time at the cooperative's mill in Buffalo.

G.L.F. Opens $180,000 Bulk Truck Facility At Its Albany Mill

ALBANY, N.Y.—Cooperative G.L.F. Exchange, Inc., has opened a $180,000 facility for loading bulk feed trucks at its mill here.

Fred H. Marks, plant manager, said the addition was built to meet "very rapid growth in bulk truck movement of all types of feed."

Trucks from G.L.F. service agencies and from farms within an 80 mile radius load at the mill, he noted. Of approximately 1,100 tons produced daily, he stated, 38% is in bulk, with about half the mill's feed going out by rail and half by truck.

The new unit includes 32 bins of 10 ton capacity each, over a scale 90 ft. long. The operator controls all bin gates and weighing of trucks from a scale house. The bins can be charged with a complete line of G.L.F. feeds from an electronic control panel on the manufacturing floor. Conveyors feed the bins from the line mix plant's dairy line, poultry line or scratch and pellet line.

Trucks loading at the mill range from 5 to 20 tons capacity, Mr. Marks said, and move out some 250 tons a day.

Of bulk feed shipped by rail, 92% is loaded in hopper cars. Currently 95% of incoming ingredients are received in bulk, Mr. Marks stated. Deliveries are received via rail, truck and water, the latter by Hudson River and Barge Canal.

Pelleting Increases

Mr. Marks also mentioned the plant's increased production of pellets to meet demand. Pelleted dairy feeds alone increased 100% in the past year, he said. This demand has been met by another addition housing four complete pelleting units, now producing at the rate of 80,000 tons yearly.

With 165 production, administration and laboratory employees, the mill operates two daily shifts.

Similar trends in bulk and pelleted feeds are being experienced at the G.L.F. mills in Buffalo and Binghamton, N.Y., and Bordentown, N.J., the firm reported.

Total volume of the G.L.F. mills approaches 1 million tons per year. Many of the 300 G.L.F. service agencies in New York, New Jersey and Pennsylvania also mix feeds locally.

ARKANSAS STORM DAMAGE

HICKORY RIDGE, ARK.—Recent tornadoes, thunderstorms and high winds have caused extensive damage to a number of poultry houses in this area. Peacock & Peacock, commercial egg production firm, reported losses of between $80,000 and $85,000 from violent winds that destroyed its entire laying flock. Winds also caused high damage to facilities in the Arkansas River Valley near Russellville, Dardanelle and Danville.

Letters to the Editor

Waltham, Mass.

To the Editor:

A number of questions might be raised on the Kennedy farm policy —including feed grain legislation and the attempted dumping of government-held dried eggs—and its effect on the meat and egg producer. Among the points which came to mind are these:

During the last election, major Kennedy support came from the coasts and the large cities, with greatest opposition from those farm sections favored by the feed grain bill. It doesn't seem to make sense politically unless this is a long range program to swing the Midwest back into the Democratic column.

The increased cost of the program will be directly applied to the consumer of milk, meat and eggs who voted for Mr. Kennedy. Meat, milk and eggs are most important items in our higher standard of living relative to that of other countries. Will new programs tend to impair further improvements in this standard without an improvement in the income of the meat, milk and egg producers? It is these producers' improvements in productive efficiency which are largely responsible for low consumer costs for high quality animal products.

A "stunning volume of dried egg offerings plus a disappointingly limited amount accepted promoted fairly sharp declines in all leading shell egg marketing centers last week." (Boston Sunday Herald, March 5.) The losses from this attempted dumping action averaged about 3¢ per doz. This occurred during the Lenten season, when demand for eggs is traditionally quite great.

Do these facts suggest that as a consequence of Kennedy administration activity, the poultrymen in leading areas will be hard hit both short range, as above, and long range, with higher costs?

One might also ask whether the feed grain action would grossly benefit the large corporate farm operators more than the individual Corn Belt grain farmer.

At any rate, there are a good many questions which, it would seem, should be carefully studied to determine just what we can expect for the future of animal agriculture in this country.

Dr. Walter A. Glista
Wirthmore Feeds, Inc.

Peavey Feed Mills Has Acting Manager

MINNEAPOLIS—Frank T. Heffelfinger II has been acting general manager of Peavey Feed Mills, Minneapolis, according to an announcement issued this week by the parent company, F. H. Peavey & Co.

Mr. Heffelfinger, vice president of F. H. Peavey & Co., has assumed the new responsibility from Wallin Bynell, who has taken a leave of absence.

"No operational or program changes are involved in the shift," the announcement said.

Asks Clearance of Calf Scours Treatment

WASHINGTON — The Food and Drug Administration has announced the filing of a food additive petition for a treatment for calf scours.

American Cyanamid Co. filed a petition proposing issuance of a regulation to provide for use of chlortetracycline (Aureomycin) and sulfamethazine with vitamins for treatment of bacterial calf scours.

PHOSPHATE DISTRIBUTION—Three men concerned with distribution of the first Japanese-manufactured bulk feed phosphate shipment are shown at Portland with the vice chairman of Portland's commission of public docks, Homer T. Shaver, second from left. They are, from left to right, Harold Steinman, International Minerals & Chemical Corp. field sales manager; Walter C. Hanson, Seattle, James Farrell & Co. partner; and John K. Westberg, feed ingredients department sales manager for IMC.

Bulk Phosphate from Japan Reaches Portland

By Special Correspondent

PORTLAND, ORE.—Guarantee of "continuous flow of high quality feed phosphate supplies" from Japan to the port of Portland, and then to various sections of the West, became a reality last week when International Minerals & Chemical Corp., Skokie, Ill., received its first bulk Tricaphos shipment here from Moji, Japan.

Unloading of the first bulk Tricaphos shipment started March 22 at Portland Public Docks' Terminal No. 4 and signaled the start of regular inbound movements of this manufactured feed phosphate on a scheduled basis.

This was described as a major event for Portland and the Pacific Northwest and was commemorated by a celebration luncheon at Portland's University Club. Attending were high IMC officials, representatives of the originating Onoda Hiryo Co., Tokyo; Pacific Northwest feed association representatives; Oregon and Washington agricultural departments; civic leaders and shipping trade representatives.

George Moyers, IMC vice president and a member of the organization for some 35 years, told the luncheon gathering: "I sincerely feel that receipt of the first bulk Tricaphos shipment here will mark the beginning of a very large, prosperous business for this section of the country."

Another main office IMC official, John K. Westberg, feed ingredients department sales manager, told the luncheon guests that he and his organization were pleased to play an increasingly important part in the Pacific Northwest's agri-business through the development of the bulk facility at the port of Portland.

Search for Ideal Port

"IMC checked all the major ports in the Pacific Northwest in its selection of a port for the bulk shipments of Tricaphos, and in light of all the facts uncovered, we selected Portland. We even projected our thoughts 10 years into the future," Mr. Westberg said. "This whole project is an amazing illustration of how two good businesses—one in the U.S. and the other in Japan—can work together for a common purpose."

J. Nagano, Tokyo, Japan, chief of Onoda Hiryo Co., sales section, not only saw the Nisson line ship "Nikkei Maru," load the Tricaphos at Moji, but also witnessed unloading operations here. He addressed the luncheon and presented Portland's Mayor Shrunk with two valuable Japanese dolls, one from the mayor of Moji and another from President Ondo of Onoda.

"We Japanese are looking forward to this enterprise and hope that these Tricaphos bulk shipments will serve to further cement relations between the U.S. and Japan," Mr. Nagano told the group. "Portland is well known throughout my country as a shipping point for wheat and lumber."

Mayor Shrunk, who has visited Japan and knows many officials in that country, expressed belief that free trade offers the greatest opportunity for better understanding between nations and lasting world peace.

"This is just the beginning of increased trade with our Japanese friends. From our portside will be movements of other Japanese products," Mayor Shrunk declared. "There is a 'two-way street' from Japan to the U.S. This country sells a lot of wheat, lumber and other products to Japan."

Walter C. Hanson, Seattle, James Farrell & Co. partner, exclusive Western Slope sales representative for IMC products, told the celebration luncheon that it is rewarding to be a part of the big project and that a great deal of credit goes to Tom Guerrin, Portland Port Commission manager.

"This is the beginning of IMC plans to increase the firm's service to west-

(Turn to PHOSPHATE, page 96)

DAVID PIGG SICK OF RAISING HOGS

LENA, MISS. — A physician here has diagnosed his patient's trouble. David Pigg, a farmer, is allergic to hogs.

Protein Blenders Names New Vice President

IOWA CITY, IOWA — James E. Kolls has been appointed to the office of executive vice president of Protein Blenders, Inc., Iowa City feed manufacturer. Mr. Kolls was also appointed to the presidency of Maplecrest Turkey Farms, Wellman, Iowa, a wholly owned subsidiary of Protein Blenders.

James E. Kolls

Mr. Kolls was president of Western Tool & Stamping Co. of Des Moines from 1957 to August of 1960. He was a member of that firm's board of directors from 1946 until his resignation in 1960. During this period he was also president of TEV, Inc., a manufacturing firm in Gainesville, Ga.; president of Blair Manufacturing Co. in Springfield, Mass., and a director of New Monarch Machine & Stamping Co. in Des Moines.

Purina Sees Sales Gain, Profits Equal to Or Above Fiscal '60

ST. LOUIS—Ralston Purina Co. is anticipating a sales gain for the year ending Sept. 30 with profits equal to or above the figures for fiscal 1960, according to Raymond E. Rowland, company president.

Mr. Rowland's comments on the business outlook were quoted in the St. Louis Globe.

For fiscal 1960, Ralston Purina had net income of $18,000,234, or $2.76 a share on sales of $510,268,700.

"I will say that profits will be equal to last year's, but I'll be disappointed if they aren't up proportionately with sales," he said in an interview with Dow-Jones Service.

The Ralston Purina official noted that favorable prices for poultry and livestock were aiding prospects.

Sales of Ralston Purina's breakfast cereals and dry dog food are running ahead of last year, Mr. Rowland said. In January the company posted the largest sales month for Dog Chow since it entered the market. In 1960, Ralston Purina accounted for 30% of dry dog food sold through grocery outlets.

A fourth Dog Chow plant under construction at Battle Creek, Mich., will be completed in September.

Mr. Rowland said he was encouraged so far by the initial market acceptance of a nine unit combination package of individual servings of the company's three dry breakfast cereals. National distribution began in January.

Sales of Ralston Purina's sanitation and farm supply division are running ahead of last year, but the soybean division to date has not been a profitable business.

He noted, however, in connection with soybeans that the company entered the business largely to protect the quality and supply of soybean meal as an ingredient of its livestock and poultry feeds.

Expect $20,000,000 Sales Increase

The Ralston Purina president said he saw no reason to change his prediction made at the annual meeting in December that International Division sales will rise to about $50 million this year from about $30 million last year.

This division has just completed a new plant in Mexico and France and is planning additional plants for France and Germany. Both its French and German units currently are rationing feeds to customers.

Investigations looking toward a feed venture in Italy look favorable, Mr. Rowland said. However, he said it was too early to comment further concerning Ralston Purina's future expansion abroad.

He added that "as time goes on and we see favorable economic and political situations we will expand our foreign operations."

Albers Supplying Feed For New Egg Operation

HENDERSON, COLO.—Albers Milling Co. has begun supplying complete feed from its Ft. Lupton, Colo., plant for a new egg production enterprise here which at peak capacity plans to have 250 000 caged hens laying about 180.000 eggs daily (Feedstuffs, March 25, page 8).

So far, Rocky Mountain Egg Co. has about 12,000 growing pullets placed in four completed colony cage houses. A total of 80 similar houses is to be built within about 30 months, according to partners in the new business, officials said. An egg processing building is under construction on the small farm near Henderson. Rocky Mountain Egg Co. plans to sell its eggs to supermarkets and wholesalers of the Denver area.

Henderson is halfway between Denver and Ft. Lupton, about 15 miles from each.

E. W. Priebe W. C. Nigut

Pacific Convention To Include Special Poultry Conferences

LAS VEGAS, NEV. — Conferences on turkeys, shell eggs and egg products and poultry will be among features planned for the Pacific Dairy & Poultry Assn.'s 37th annual exposition and convention at the Riviera Hotel here April 13-15.

The egg conference speakers will be Dr. Hans Lineweaver, director of the U.S. Department of Agriculture's western utilization research laboratory at Albany, Cal., and Edward W. Priebe, Jr., national production manager for eggs, Kraft Foods, Chicago.

Slated for Friday morning, April 14, Dr. Lineweaver's talk is entitled "Some Quality Variations in Shell Eggs and Egg Products." He will cover technical information of a practical nature that can be incorporated into poultry businesses.

Mr. Priebe's talk at this conference is entitled "Marketing for Prof-

(Turn to CONVENTION, page 96)

H. L. Miller Hans Lineweaver

Memphis Oil Meal Futures Move Higher

MEMPHIS, TENN.—Influenced by the continued upward spiral of soybean futures and improved cash market business part of the period, oilseed meal futures moved higher on the Memphis Board of Trade during the past week.

Also factors were a bullish soybean crushings report, improvement in consumption and the Laos situation. About midway through the period, cash demand picked up and helped bolster prices.

Unrestricted soybean oil meal closed March 28 $1.25@2.75 ton higher than on March 21, Eastern Trunk Line soybean oil meal closed unchanged to $1 higher and bulk solvent cottonseed oil meal closed unchanged to 25¢ higher.

Trading volume for the week amounted to 8,100 tons of unrestricted soybean oil meal.

S.E. Broiler Group Will Meet April 7

ATLANTA—The broiler commodity committee of the Southeastern Poultry & Egg Assn. will meet April 7 at the Henry Grady Hotel in Atlanta. Purpose of the meeting is to review industry problems and make recommendations to the Southeastern board of directors for action, according to Smith Johnston, Woodstock, Ga.

Mr. Johnston is serving as chairman of the committee which is charged with the responsibility of studying the problems encountered "in the production, handling and marketing of broilers and to recommend to the directors such actions as the committee deems advisable," it was reported.

Cash Soy Strong; Futures Decline

By F. C. BISSON
Special Correspondent

CHICAGO—Although cash soybean meal not only held up very well and actually gained some ground during the past week, the futures were inclined to easiness.

The more nearby and most active deliveries were off about $1.50 per ton while spot 50% protein meal at Decatur was strong at $74 and up about $4 per ton from a week ago.

Easiness in the meal futures stemmed largely from the character of the news that was coming out of Washington pertaining to the government's plan to keep corn prices well down and around the $1 level, farm basis, at least until October. All corn futures, as well as all deliveries of the other feed grains were into new low seasonal ground with May corn selling under the $1.07 mark which makes the farm prices no better than 90¢ at best.

This in turn made corn highly competitive with bean meal. At around 90¢ this means about 1½¢ lb. for corn while bean meal, Decatur basis at $74 means about 3¾¢ lb. Volume of meal futures trade at Chicago fell off slightly this past week but managed to average around 900 lots per session.

Members of the Chicago Board of Trade will vote April 10 to change the trading hours of both soybeans and the product. If the proposal rule carries, instead of meal and oil opening at 9:15 a.m. and closing at 1:45 p.m., with beans opening at 9:30 a.m. and closing at 1:15 p.m., all three commodities will open pit trade each day at 9:30 a.m. and close at 1:30 p.m.

RETAIL SALES EXPANSION

NAPA, CAL.—Orso Feed & Milling Co. is expanding into the retail business. The firm, long active in the feed manufacturing business in Napa, Sonoma and Solona counties, has hade a major expansion in the farm supply field. Einar Orso has a partner, Stan Niklewicz, who is active in the retail store phase of the business. The Sonoma store has been done over and now offers a one-stop supply service, including feed, variety items, nursery products, hardware items and others.

HOW ABOUT THOSE WITHOUT CORN, MILO?

WASHINGTON — A question that many grain and feed men are asking about the new feed grain program was answered this week by U.S. Department of Agriculture officials.

The question: Does a producer have to reduce his acreage of feed grains if he does not have a history of corn or grain sorghums?

The answer: A definite no. The only reduction required is in corn and grain sorghum. Producers of barley, oats and rye who do not produce corn or grain sorghum will be eligible for support on their 1961 production of these crops.

Furthermore, producers who do have a history of corn and grain sorghum production and cooperate in the feed grain program will be eligible for price support on their production from the acreage planted to these two crops, and for support on barley, oats and rye.

Producers of corn and grain sorghum who do not cooperate in the emergency feed grain program will not be eligible for support on any of the five feed grain crops—corn, grain sorghum, barley, oats and rye.

Form Joint Association To Produce Roller Mills

OMAHA, NEB.—The Mooers Manufacturing Co. of Windom, Minn., and Mid-States Mill Machinery Co. of Omaha have announced joint association in the manufacturing of grain roller mills.

The original mill was manufactured under Mid-States specifications at Wahoo, Neb., but was not widely promoted because of limited production facilities, officials said.

Under the new arrangement, the Mooers plant will produce stationary and mobile (for use with mobile feed plants) grain rolls. The standard grain roll will be available in the 9 in. x 28 in. single pair, or two high parallel grooving for all grains. Larger diameter rolls will be available if desired, it was announced.

Les Anderson, owner of the Mid-States Mill Machinery Co., will be in charge of sales of the Mooers grain roll as well as the stationary industrial hammermills, molasses blenders and the Mooers mobile feed plant.

SCHOOL

(Continued from page 1)

A research coordinator will be employed.

Objectives

The introduction to the nine-point list of objectives states: "Feed Production School, Inc., is dedicated to provide the feed industry with a national organization whose primary objective is to build, report and record the technology of feed production." Here are the objectives:

1. To establish and publish standard definitions of terminology for use in feed production.

2. To adopt or establish standards of measurement for use in feed production and related fields in cooperation with recognized technical authorities or organizations.

3. To establish standards of feed processing, in cooperation with recognized technical authorities or organizations, by which the feed industry and equipment suppliers may measure and record their achievements.

4. To inspire full cooperation and utilize the efforts of the feed tech program at Kansas State University and other educational institutions demonstrating an interest in feed production.

5. To form a permanent library of technical papers, periodicals, publications and related material pertaining to the technology of feed production; to make such information available, properly catalogued and cross-indexed, to the entire industry or governmental agencies.

6. To survey, evaluate and coordinate or sponsor needed research projects which have value to the feed industry and related institutions as well as government agencies.

7. To raise money by subscription and other means from said manufacturers, equipment suppliers, ingredient suppliers and consultants to defray expenses for research projects underwritten by Feed Production School, Inc., including those monies necessary for establishing and maintaining a library of Feed Technology.

8. Publish a handbook of feed technology available for the industry and governmental agencies.

9. To further coordinate cooperation of other feed industry associations and elicit their help and financial aid for the work of Feed Production School, Inc.

"We believe that the feed industry has arrived at the point where it realizes its need for answers to many questions that only research can provide," said Joe Sloan, Cosby-Hodges Milling Co., Birmingham, Ala., chairman of the board of Feed Production School, Inc.

"This is an ambitious program, we realize. It will take time to accomplish all the objectives, but we are confident that they will be accomplished through industry cooperation," he said.

Lloyd S. Larson, president of Feed Production School, Inc., called the adoption of the objectives "a bold step that should benefit the entire industry."

"If Feed Production School is to serve the industry, it must provide the industry with information developed through research," Mr. Larson continued. "Results of the program will be in direct relation to the active support of the industry. But we are convinced that once research is underway, it will make valuable contributions to feed manufacturing knowledge, thereby demonstrating to the industry the soundness of this approach."

Already a temporary Research Committee is at work exploring and defining projects for research. Oak B. Smith, Wenger Mixer Mfg. Co., Kansas City, is chairman. Other committee members are Gene Spitzer, Murphy Products Co., Burlington, Wis.; Loren Burns, Mel Miller & Co., Inc., Kansas City; Art Stegner, Butler Mfg. Co., Kansas City; Dr. Harry Pfost, Kansas State University, and Paul Sanders, Elanco Products Co., Indianapolis, Ind.

Project List

On the current project list are such items as: (1) A standard method of measuring dispersal of micro-ingredients through mixed feeds. (2) Basic research into means of minimizing separation of mixed feeds in elevating, conveying and binning systems. (3) Continuation of research into flow of materials within a bin, and effective means to eliminate bridging of materials in bins. (4) Separation of mixed feeds within horizontal conveying systems. (5) Continued research into measurement of particle reduction and modules of fineness. (6) Continued research into a standard method of measuring pellet toughness. (7) Evaluation of additives as a means of increasing pellet toughness. (8) Continued research into the effect of gelatinization of starches on feed conversion and on pellet toughness. (9) Effect of interior die temperatures on pellet toughness. (10) Effect of pelleting on micro-ingredients, including vitamins. (11) In-plant testing and analysis for micro-ingredients. (12) Means of improving pellet toughness for formula feeds containing added fats. (13) Palletizing of bulk feeds.

Details of the fund-raising plan will be presented to the Board of Trustees of Feed Production School, Inc., at a meeting in Chicago during the American Feed Manufacturers Assn. convention. The breakfast meeting will be held at 7:30 a.m., May 9, in Private Dining Room No. 2 at the Conrad Hilton Hotel.

MIDWEST ASSOCIATION PLEDGES SUPPORT

KANSAS CITY—The Midwest Feed Manufacturers Assn. has pledged support of Feed Production School, Inc., by offering to pay half of the salary of a research coordinator. The action was taken this week by the executive committee meeting in a special session here.

In announcing Midwest's action, Larry Alley, Pay Way Feed Mills, Inc., Kansas City, president of the association, said: "We believe the research program and the work of a research coordinator are most important to the Feed Production School and its contributions to the feed industry. This program is deserving of the entire industry's financial support."

FEED FIRM FORMED

VINA, CAL.—The Vina Pelletized Feed Co. has filed articles of incorporation to manufacture livestock feed here. The firm listed $200,000 in $10 par stock. Directors are George M. and Ruth M. Beck of Vina, and Russell M. Christensen of Red Bluff, Cal.

Basic Research Findings 'May Lead To Coccidiosis Control,' USDA Says

WASHINGTON—The U.S. Department of Agriculture this week announced basic research findings that are said to explain the hatching mechanism of coccidial cysts. These findings, said USDA, "may open the way for effective coccidiosis control in poultry and livestock."

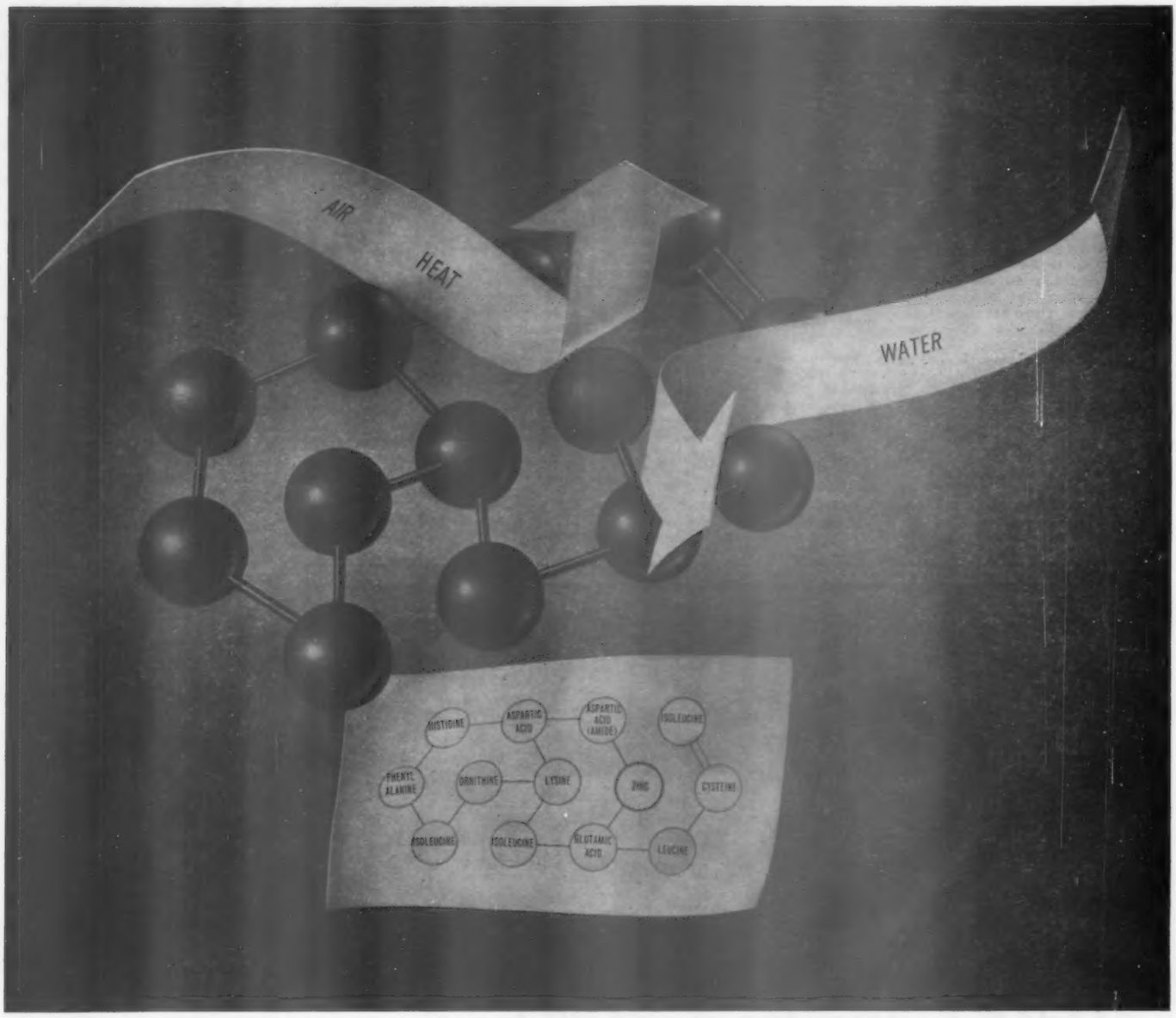
In this research, Dr. John C. Lotze and Robert G. Leek, parasitologists of USDA's Agricultural Research Service, were able to induce hatching of coccidial cysts in the laboratory after treating them with enzyme and bile.

"This work," the report said, "indicates the possibility of control within the host by drugs that would interfere with hatching action, and of control outside the host by use of enzyme-like substances as sprays or other treatments to destroy the protective coverings of coccidial parasites in forage, feed or water.

"Coccidiosis in animals or poultry develops only when the egg-like coccidia cysts hatch in specific areas of the host's digestive tract. Conditions that trigger this action include: (1) a proper combination of time and temperature in the host; (2) enzymatic action on the coccidial cyst wall in the upper part of the host animal's digestive system; and (3) presence of bile."

Dr. Lotze and Mr. Leek said they made their discoveries by duplicating at the Beltsville parasitological laboratory certain of the conditions under which this parasite normally hatches in host animals.

PRODUCTION SCHOOL—Members of the board of directors of Feed Production School, Inc., are pictured at a recent meeting. Seated around the table from left to right: Oak Smith, Wenger Mixer Mfg. Co., Kansas City; Vernon Hayes, Hayes & Stolz Industrial Mfg. Co., Ft. Worth, Texas; Gene Spitzer, Murphy Products Co., Burlington, Wis.; Art Stegner, Butler Mfg. Co., Kansas City; Kenneth Grissinger, secretary, Feed Production School; Lloyd S. Larson, president, Feed Production School, Inc.; Fred Darragh, Jr., the Darragh Co., Little Rock, Ark.; Joe Sloan, Cosby-Hodges Milling Co., Birmingham, Ala.; Larry Alley, Pay Way Feed Mills, Inc., Kansas City.



CSC adds zinc to bacitracin and builds a new, stable molecular structure: Baciferm

From CSC research comes the answer to the search for full bacitracin potency. The answer: Baciferm®—a zinc-bacitracin compound, an antibiotic with a totally new and stable molecular structure.

How did CSC research build this new molecule? First, CSC scientists discovered the weak spot in bacitracin's molecular structure. Then, through testing and experimentation, they "hooked" various metallic salts onto this "weak link" to see if they could stabilize it. Many salts were tried — manganese, iron, tin. Then zinc, and it proved to be the answer. Baciferm — a zinc bacitracin — was perfected!

The benefits of this scientific breakthrough. With this unique molecular structure, Baciferm displays unusual stability, retains its full measure of antibiotic activity. In fact, tests have shown that it keeps its full strength for years. Feed processors using Baciferm can therefore forget about any potency loss during the time interval between manufacturing, shipping, mixing, selling, and the actual date of feeding. No antibiotic loss during pelleting with Baciferm.

In short, feed processors can use Baciferm with confidence. It is a sound, stable antibiotic that can be counted on every time.

Would you like more information? Write: Animal Nutrition Department, Commercial Solvents Corporation, 260 Madison Ave., New York 16, N. Y. In Mexico: Comsolmex, S.A., Mexico 7, D.F.

COMMERCIAL SOLVENTS CORPORATION CSC

Feed Production School Announces Feed Industry Definitions Contest

KANSAS CITY—Feed Production School, Inc., has announced a feed industry definitions contest in connection with the 1961 school.

To date, over 50 tentative definitions covering finished feed, feeds in process and processing terms have been prepared by the Production School Definitions Committee.

In making the announcement, Lloyd Larson, president, Feed Production School, Inc., pointed out that a $10 certificate for each definition will be awarded to anyone who submits a definition that is adopted by the committee. These certificates are redeemable on the Feed Production School registration fee for 1961, hotel expenses and transportation, in that order, depending on the amount won by the individual contestant.

Copies of the tentative definitions prepared by the committee are available from: Definitions Committee, Feed Production School, Inc., 20 West Ninth Street Building, Kansas City, Mo.

"Using these terms and definitions as a starting point, contestants may improve on or rewrite the definitions. For each improved or rewritten definition adopted by the committee, we will award a $10 certificate, with no limit on the number of prizes for each contestant," according to Mr. Larson.

Samples of definitions prepared to date include:

Supplement—A feed ingredient or mixture which requires the addition of other feed ingredients to form a complete balanced ration for animal, fowl or fish. Supplement feed may be capable of sustaining life, growth, and production but generally only when other feed requirements are met by additional feed ingredients.

Concentrate—A fortified supplement feed which requires the addition of other feed ingredients to form a complete balanced ration for animal, fowl or fish. Concentrate feeds are capable of sustaining life but generally require the addition of other feed ingredients to obtain or sustain maximum production.

Pellet Feeds—Agglomerated feeds formed by extruding individual ingredients or mixtures by compacting and forcing feed through die openings by any mechanical process.

Mash Feeds—A mixture of nonprocessed and/or individually processed ingredients or combinations of both.

Premixing—The preliminary blending of ingredients used at low levels with or without diluents (carriers).

Grinding—The reduction of particle size by impact or attrition.

It was pointed out by Eric Carlson, chairman, Feed Production School Planning Committee, that there is a need for standardization of terms in the feed industry. "We hope that this preliminary work of the definitions committee will lead to complete standardization of terms in order to eliminate the confusion that exists among feed manufacturers when discussing their products, processes and equipment."

Closing date for the contest is June 1. In case of a tie, entry with the earliest postmark will be declared winner.

Gerald A. Karstens, Feed Age, Chicago, is chairman of the definitions committee. Other committee members include Oak B. Smith, Wenger Mixer Mfg. Co.; Eric Carlson, Ralston Purina Co.; Robert Wornick, Chas. Pfizer & Co.; Zip Zeller, Foxbilt Feeds, and Phil Murray, The Pillsbury Co.

Research Reports to Be Given at Missouri's Livestock Day April 7

COLUMBIA, MO.—The University of Missouri's Spring Livestock Day, slated here April 7, will include 10 reports from staff members of the animal husbandry department on various livestock research projects, according to J. E. Comfort, university beef specialist in charge of the program.

Cattle research reports will include three by Dr. G. B. Thompson on effects upon carcass marbling of a controlled energy ration for feeders; a study to see which roughage goes best with high moisture corn fed to yearling steers, and a comparison of a liquid protein supplement and soybean meal for wintering calves and fattening yearlings.

Other cattle reports will include two by Dr. W. H. Pfander, nutrition specialist. He'll discuss an all-grain ration as compared to grain plus hay for steers, and evaluating Missouri forages.

Other university staff members giving cattle reports will be Mr. Comfort, B. J. Greiman and A. J. Dyer. In addition, there'll be topics of interest to hog and sheep producers.

Guest speaker at the Missouri event will be Martin R. Domke, cattle feeder from Greeley, Colo.

Nominate Jim Prahl For Memphis President

MEMPHIS, TENN.—Jim Prahl of the Riverside Oil Mill in Marks, Miss., has been nominated for the presidency of the Memphis Grain & Feed Club by the nominating committee. The election will be held April 18.

Mr. Prahl, elected 1960 vice president, has been serving as acting president since the transfer of James Spicola to Minneapolis by Cargill, Inc.

Other nominees announced at the club's monthly meeting are: Vice president, Dale King of Standard Commission Co. and Cary H. Humphries of Cargill, Inc.; secretary, Bill Holt of Overly & Withers and Elmer Short of Pillsbury Co.; treasurer, David L. Rucker of National Alfalfa Dehydrating & Milling Co., and George Cole of Buckeye Cellulose Corp.; directors, Bob Karlsberg of Continental Grain Co.; Charles Keith of Mitchell, Hutchins & Co.; John Hearn of Swift & Co. Oil Mill, and James Sartain of Ralston Purina soybean oil meal division. Two directors will be elected.

Western Farmers Assn. Opens New Division

SEATTLE, WASH.—A new grain marketing division is being established by Western Farmers Assn. here to provide expanded grain marketing services for northwest farmers, Harry J. Beernink, WFA general manager, announced.

Donn DeWitt, present WFA district manager for Oregon and southwest Washington, will head the new division with headquarters at Seattle, Mr. Beernink said.

A. E. Ojendyk, assistant manager of the poultry division at Portland, has been promoted to district manager replacing Mr. DeWitt. Mr. Ojendyk's headquarters will continue at Portland.

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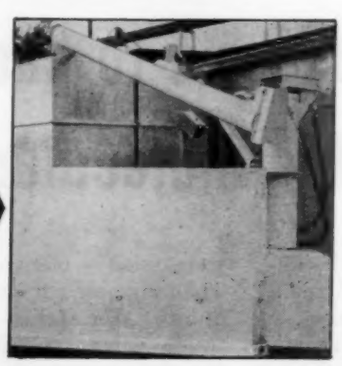
NEW only PAMCO unloads AND loads from the rear AND front!

PAMCO's Big Daddy . . . another PAMCO first . . . feeds more new profits to your bulk customers with the new PAMCO PROVEN front unloading and loading service. The Big Daddy combines PAMCO's proven auger system with the precision performance of a dual hydraulic system to deliver all types of feed including molasses feeds. Choose the PAMCO bulk delivery truck that best fits your needs . . . PAMCO Back Saver—or—Skoop Skipper with rear unloading AND loading—or—PAMCO Big Daddy with front unloading AND loading.



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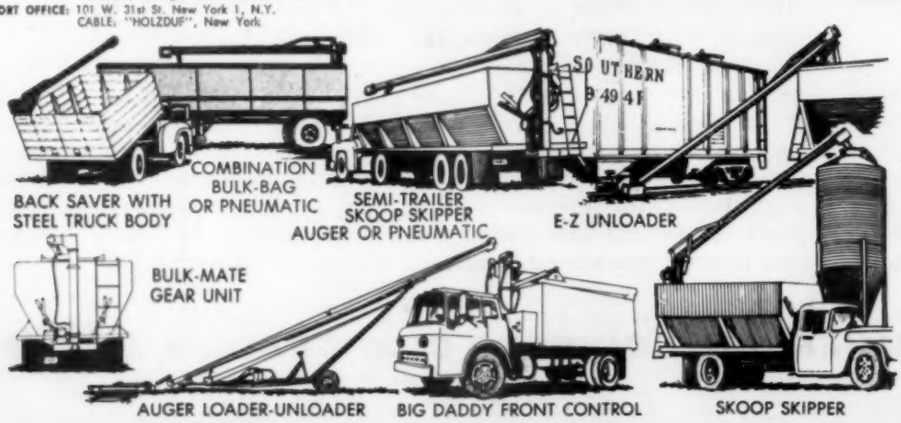

Read CAPITAL COMMENT In FEEDSTUFFS

COLORED CHICKS RIGHT FROM THE SHELL

TUCSON, ARIZ.—The chicken eggs looked just like any other white-shelled eggs. Only, when the egg shells suddenly cracked open in the incubator, a tiny flaming red chick and a Kelly green chick emerged, peeping an Easter greeting.

These colored chickens hatched as a result of an experiment by the University of Arizona poultry science staff members who were preparing for an Easter display in Tucson.

Instead of the traditional method of getting colored chicks by dipping a chick after it was born into a colored solution, the Arizona scientists injected harmless food coloring inside the egg.

"Two or three days before a chick was scheduled to hatch, we injected food coloring into the amniotic fluid which surrounds the unborn chick inside the shell," explained Dr. Frank Rollins.

The down on the chick picks up the coloring so that when the chicks actually hatch they emerge as brown chicks, yellow chicks, purple chicks and other colors, he said. The coloring remains for a week and a half to two weeks, depending upon the breed of chicken, Dr. Rollins said.

R. L. Ward Heads Soft Phosphate, Inc.

MEDIA, PA.—Robert L. Ward, former vice president of Soft Phosphate, Inc., here, has acquired the presidency of the corporation from J. Stewart Bevis, according to announcement from the firm.

Robert L. Ward

Mr. Ward has considerable experience in the soft phosphate business and was formerly associated with his father, R. D. Ward, in the Ward Feed Co., Glen Ellyn, Ill. Soft Phosphate, Inc., merchandises several brands of soft phosphate from 11 plants in Florida to the feed trade throughout the U.S. and Canada, the announcement continued. Sales are through 30 manufacturers' representatives.

CPA Formula Feeds Show 30% Increase

ATLANTA, GA.—Through the first seven months of the 1960-61 fiscal year ending Jan. 31, 1961, the Cotton Producers Assn. dairy, poultry (other than broiler) and stock feeds showed an increase of 30% over the same period last year. according to J. Julian Baker, director of general distribution, CPA.

These feeds are manufactured at CPA Cooperative Mills, Gunterville, Ala., and Cooperative Mills, Flowery Branch, Ga.

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You'll never know how effective a rat killer can be until you've tried the amazingly efficient FERRET for 100% rodent control! From coast to coast all users including Elevators, Feed and Grain dealers; Stock Yards in Chicago, Milwaukee, Omaha and Denver, report sensational results! FERRET eliminates infestation losses. Gain prestige with present and new customers. Write for FREE information. Distributors and Dealers wanted. Ferret Laboratories, Box 210, Rt. 2, Oconomowoc, Wis.

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RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

Don H. Fisher

Lawrence Alwin

Name 2 to Field Staff Of Mel Miller & Co.

KANSAS CITY—Two appointments to the staff of the field operations division of Mel Miller & Co., Inc., have been announced by Mel Miller, president.

Don H. Fisher has been named director of swine operations, and Lawrence Alwin has been appointed swine supervisor for eastern Kansas operations of the Kansas City-based farm-to-market coordination firm.

Mr. Fisher has moved to Kansas City from Noblesville, Ind., where he was manager of swine production for Conner Prairie Farms, owned by Eli Lilly of Indianapolis. In that post since 1951, Mr. Fisher was responsible for development of swine operations that included 900 sows at 23 production centers producing 10,000 pigs annually. He conducted swine management training programs for sales personnel and farm management groups and acted as a consultant on swine management problems.

Mr. Alwin, who lives in Holton, Kansas, is a graduate of Kansas State University, and taught vocational agriculture in Kansas schools for a number of years. He has been in feed sales work for the past several years.

Currently Mel Miller & Co.'s farm-to-market swine programs are operating in eastern Kansas, with Topeka as headquarters, and in western Missouri, with Carrollton as headquarters. These programs are sponsored by Agricultural Development Co., a division of Bartlett & Co.

NAMES SALES MANAGER

GAINESVILLE, GA.—Winston L. Thompson has been made sales manager of the Lanier Industrial Supply Co., dealer in poultry service equipment. He will cover Georgia, Alabama, Tennessee and the Carolinas. The company also announced that Ike L. Farmer of Clarkesville will represent the company in east Georgia and the Carolinas.

West Coast Groups Welcome Surplus Grain

SAN FRANCISCO—West Coast port, terminal and grain interests welcome the first shipments of a total of 10 million tons of surplus Middle West grain scheduled to be moved to the coast, it was reported.

The Commodity Credit Corp. grain is being moved to Oregon, California and Washington storage facilities in an attempt to gain a larger portion of the Japanese and other Far Eastern markets.

Japanese interests have indicated they would consider buying more U.S. feed and food grains if they were available on the West Coast for immediate shipment. According to Curt Rocca, chairman of the Western State Committee for the Expansion of Grain Merchandising, only 4% of CCC grain is now stored on the coast. "And yet," says Mr. Rocca, "it is the western grain operators who do most of the substantial marketing of the products to Oriental markets."

The Western States Committee for the Expansion of Grain Merchandising hopes that the initial movement of 10 million bushels of hard wheat can be expanded to 100 million bushels of CCC feed and food grains of all types.

Who Uses SOFT PHOSPHATE?

- Over 2,000 Feed Mills Throughout the United States and Canada!
- Approximately 90% of the Mineral Feed Mixers!
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They Know: RESEARCH AND EXTENSIVE USAGE PROVE, AND WE GUARANTEE, SOFT PHOSPHATE PERFORMS AS WELL AS THE HIGH PRICED PHOSPHATES—WHEN USED PROPERLY!
(Further information on request.)

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SOFT PHOSPHATE is the officially recognized designation approved by the Association of American Feed Control Officials!

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Yesterday
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Histostat®-50 still prevents blackhead best

...and this year, many more millions of turkeys will be protected with this No. 1 blackhead preventive

Every year, for ten years now, more and more turkeys have been raised on feed containing Dr. Salsbury's Histostat-50. Why? Because growers have found that Histostat-50 consistently protects their flocks against mortality and weight loss from blackhead. That's reason enough, because this kind of disease prevention is their best assurance of strong, healthy birds, the kind that are necessary to profit. In addition, test after test at experiment stations have given similar results: *Histostat-50 prevents blackhead best*. So encourage growers not to take chances with turkey profits. Mix Histostat-50 in all rations for turkeys on range and advise that it be fed continuously. Growers may need to feed Histostat-50 earlier, if they've had trouble with blackhead in the brooder house. Remember—growers can't make money on dead birds.

Histostat-50 is widely advertised

Because of sustained advertising and promotion, your customers know of Histostat-50's superior blackhead protection. That's why it is steadily growing in popularity. Make sure your turkey feeds can measure up—mix Histostat-50 in rations for range birds. Write, wire, or phone for Feed Manufacturers Guide. Or, ask for a Dr. Salsbury's representative to call personally and talk with you about Histostat-50, the feed additive that is the nation's No. 1 blackhead preventive!

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MORE THAN PRODUCTS—A SYMBOL OF SERVICE

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Feed for Thought

MULTIFACS?

Although Mr. Webster's dictionary won't define, "Multifacs," your Peter Hand representative will be happy to do so for you. These economical one-package fortifiers provide the vitamins, antibiotics, antioxidants and sources of the Fermentation Solubles and Grass Juice Factors in a practical and convenient form. They contain the most stable vitamins available, compounded to provide correct fortification for all poultry and swine feeds. The Peter Hand Multifac Premixes also contain the most effective antibiotics for each species and the antioxidant, Santoquin, where it is effective.

These micronutrients are blended with high quality, concentrated, primary fermentation sources of the Fermentation Solubles and Grass Juice Factors. These primary fermentation sources also provide some Fish Factor but we recommend that high quality fish products supplement the Multifac Premixes, especially in critical feeds like breeder, broiler, chick, turkey and pig feeds.

A brochure is available which describes the Peter Hand Multifacs in detail. The brochure outlines specifications, usage levels and includes suggested formulas which can be manufactured economically with Peter Hand Multifac Premixes and common ingredients such as fish and meat meal, soybean meal, alfalfa meal, minerals and grain. Specify if you would like the brochure which includes formulas with corn or with milo as the chief grain, since programs have been worked up for areas where each is used most extensively.

* * *

Requests for the Peter Hand Nutrient Level Card for 1961 have been pouring in. If you haven't written for yours, do so today. We'll be happy to send it to you.

J. R. LINSNER
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PETER HAND FOUNDATION

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Look for "Feed for Thought" every month. This popular column appears regularly in this same place (page 14) in the first Feedstuffs issue of each month.

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Feed Men Hear Reports on Research On Quality, Value of Fishery Products

By ROGER BERGLUND
Feedstuffs Managing Editor

WASHINGTON — Information on the quality and value of fishery products in feeding continues to grow, and some of the latest information was presented and discussed at the third annual Fishery Symposium sponsored by the industrial products division of the National Fisheries Institute.

The symposium for feed manufacturers was held at the Sheraton Park Hotel in Washington immediately preceding the annual Maryland Nutrition Conference.

Nutritionists who have been working with fish meal and solubles were on the program to discuss nutritive quality of fish meal and the unidentified growth factor activity in fishery products. Also, an economist told of the use of linear programming techniques to establish the relative value of fish meal and other protein supplements in broiler feed.

Ferris Altherr of J. Howard Smith, Inc., presided at the symposium.

Summaries of symposium presentations follow:

NUTRITIVE QUALITY OF FISH MEAL TODAY—"Fish meals are a valuable nutrient ingredient of today's quality mixed feeds," said Dr. L. E. Ousterhout, "and based on present price structures, it is economically advisable in many areas to include fish meal in mixed feeds."

Dr. Ousterhout, with the Bureau of Commercial Fisheries Technological Laboratory at College Park, Md., noted that, from a standpoint of feed formulation and quality control, fish meals of uniform composition cannot be produced. However, he added, one should not expect these marine feed supplements to contain constant levels of dietary factors since meals come from fish of many species, ages, etc., and may be processed from whole fish or waste remaining after processing.

"Of importance to the feed manufacturer," he said, "should be knowledge of the extent that meals of normal commercial production might be expected to differ in nutrient factors. Unfortunately, almost all composition handbooks give only the mean nutrient content values for the various feedstuffs."

Dr. Ousterhout went on to tell of research designed to provide information on some of the questions in feed formulation and fish meal processing.

Recent studies on over 70 commercial fish meals have shown that variations in the proximate composition of the meals are principally due to variations in bone-protein ratio in the raw material and differences in efficiency in removal of fat during processing. Thus, high protein content is coupled with a low ash—and therefore low phosphorus and calcium content—in meals from meat species or catches, and vice versa.

The relatively uniform menhaden meals had a mean protein content of 60%, with variations of 4% from the mean; a mean ash content of 19%, with variations of 5%; a mean fat content of 11%, with variations of 5%. Variations in ash caused variations in phosphorus from 2.6 to 4.6% and calcium content from 4.6 to 8.0%.

Variations in composition and changes caused by processing and storage resulted in menhaden meals containing when tested a mean metabolizable energy value of 1200 Calories per pound, with variations of 200 Calories from this mean. The mean value was lower than usual table values, it was noted. Dr. Ousterhout said it may be possible to boost the metabolizable energy value of menhaden meal by 100 to 200 Calories per pound by processing changes that will be recommended.

Variation in protein quality was found to be due mainly to difference in digestibility of the protein. There is almost no variation in the essential amino acid composition among the different fish meals when the contents are expressed as percent of protein. Dr. Ousterhout noted that lysine, expressed as percent of protein, is 7.5 to 7.6%, methionine 3.1% and cystine .7%. Fish meals, he said, are "very reliable sources of essential amino acids."

He mentioned that processing changes which may be recommended will be aimed at improving protein digestibility as well as energy content.

The fish meals were found to be good sources of riboflavin, pantothenic acid, niacin and an especially rich source of B_{12}. In the main, it was indicated, the handbook figures on B vitamins in fish meal are pretty good. Vitamin B_{12} is usually above the table values, Dr. Ousterhout said, and 5% of any fish meal will supply this vitamin for the chick.

All fish meals analyzed contained all trace minerals tested for in somewhat variable quantities. Most have ¼% salt.

UNIDENTIFIED GROWTH FACTORS IN FISHERY PRODUCTS—Dr. H. R. Bird of the University of Wisconsin told of continuing research at Wisconsin on the unidentified growth factor activity of fishery products. In this work with a purified diet, the researchers have never encountered a sample of fish meal or solubles that did not give a growth response.

Dr. Bird also showed some practical diet results where fish products brought a weight advantage. In some research, a response has not been obtained, but the factors must exist, Dr. Bird observed, and where there is no response, there are things which are not understood.

Following his presentation, Dr. Bird mentioned that they are now doing some work in trying to fractionate and identify the factor in fish products. In most of the fractionation procedures, the potency is divided. It looks as though it will be a long time before a good concentration is obtained, he said. Results so far indicate that the factor is water soluble and not fat soluble.

In describing the work on the UGF activity, Dr. Bird noted that since 1955, 49 assays of the activity of fishery products have been conducted. The basal diet contained sucrose, soybean protein, soybean oil, dried whey, salts, vitamins and amino acids. In every assay, the sardine solubles used as the standard stimulated chick growth during the four-week assay period.

Forty-five fish meals and 17 fish solubles have been assayed. The fish meals ranged from 25 to 100% of the potency of the standard solubles. The 17 samples of solubles ranged from 33 to 160% of the potency of the standard.

Variations in potency did not ap-

"All-Around Layers"

Says A. Hensche

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TRUE LINES *the Complete Layer*

Have you tried expensive layers because of their high random sample records . . . only to find costly, profit-cutting weaknesses? Colonial rejects breeding systems offering no more than high egg numbers. In 1960 alone . . . the BEST TRUE-LINES layers...COMPLETE layers . . . *strong in every profit trait* . . . emerged from 660 combinations of layer lines in 2, 3 and 4-way crosses. Blue-printed by Colonial geneticists; then *proved* under actual farm conditions on Colonial evaluation farms scattered across the U. S.

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We trapnest 365 days a year instead of the customary 300. *Greater thoroughness* in proving strength and weakness makes TRUE-LINES *safer all-around.*

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How Union-Camp's 5-Star Multiwall Plan increased a pallet payload by 400 lbs. . .without increasing its size!

A leading supplier of high density resins* had been packing his product in 50-lb. sewn-bottom multiwalls. This gave him an efficient, 40-bag (2,000 lb.) pallet load.

When he added a *low density* resin to his line, however, he found his existing bag wouldn't accommodate 50 lbs. of the new resin due to its increased volume. A slightly larger, sewn-bottom multiwall was tried, but this reduced the pallet payload to 32 bags (1,600 lbs.). Net "loss": 400 lbs. Net result: more handling . . . more trips to the warehouse . . . higher cost.

Heightening the pallets to 10 tiers instead of 8, offered no solution—they wouldn't pass through the existing archways. To say nothing of the problem of loading trucks and trailer cars.

New bag does the trick

At this point, the 5-Star Packaging Efficiency Plan went to work. Union-Camp multiwall specialists experimented with several different bag sizes and styles. Their solution—a multiwall with a *pasted* bottom and side gussets, a *rectangular*-shaped base—and 20 per cent more capacity!

With the new design, 50 lbs. of the low density resin can now be packed in each bag. Most importantly, the pasted bottom bags can be palletized five to a tier, eight tiers to a skid for a total payload of 2,000 lbs.—the same as the high density resins.

Warehouse space saved

The pasted-bottom bag offered several outstanding advantages. It permitted better use of warehouse space. It increased the yield per warehouseman to *1,000,000 lbs. a month.* And it initiated the development of a similar design for the company's high density resins, which could increase the present pallet payload to 2,500 lbs.

Space-saving secret is in bottom of bag. New design (left) with rectangular-shaped base has 20 per cent more capacity than sewn-bottom bag (right).

Works for you five ways

Apart from bag construction and materials handling, Union-Camp's 5-Star Plan covers bag design, packaging machinery and specifications control. An improvement in any one of these areas conceivably could result in substantial savings for you. In any case, it costs nothing to find out. See your local Union-Camp man for complete details.

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* NAME ON REQUEST

FISHERY SYMPOSIUM—Some of the participants in the program of the Fishery Symposium in Washington, D.C., are shown here. Left to right are Ferris Altherr of J. Howard Smith, Inc., who presided; Dr. R. F. Hutton of Pennsylvania State University and Dr. H. R. Bird of the University of Wisconsin.

pear to be correlated with variations in processing and storage. The unidentified factor is apparently quite stable to ordinary conditions in processing and storage. Every lot of meal and solubles contained a measurable level of the factor, Dr. Bird pointed out.

Experiments are now in progress to determine effects of fish meal on the whole life cycle of the chicken, Dr. Bird said. In two such experiments, the characteristic early growth stimulus was observed, but birds fed fish meal were no heavier at maturity than birds not fed fish meal. Data are being obtained on egg production, egg size, hatchability and growth rate of progeny.

At this time data on egg production suggest that birds on fish meal are laying at a better rate.

A METHOD OF MAKING AN ECONOMIC EVALUATION OF PROTEIN SUPPLEMENTS—Dr. R. F. Hutton, agricultural economist at Pennsylvania State University, pointed out that means are available to conduct an objective economic evaluation of any feedstuff of determined nutritional characteristics.

He first explained use of linear programming and computers and then went on to tell how an economic evaluation of an ingredient can be conducted.

This can be done at several different levels of generality, Dr. Hutton said. First, one can estimate the value of a feedstuff when used in varying quantities in a given diet, assuming all other feedstuffs considered do not change in price. Next, one can evaluate two competitive ingredients in terms of the price and quantity of each. Finally, it is possible to look forward to the time when such comparisons may be extended to more than two ingredients at a time.

Dr. Hutton explained, among other things, a procedure called "variable price analysis." One would specify the limits placed upon the level of use of an ingredient in the diet being formulated or the level of price below which he is not interested in obtaining a solution. Without further instruction, the computer will formulate the diets containing various quantities of the ingredient in question and the price range within which each formulation is the optimum.

In the discussion of a "demand schedule" or "supply schedule" for a particlar ingredient like fish meal, it was presumed that all prices other than that of the ingredient in question remained the same. Frequently, one would be interested in questions of this type: How does fish meal compare with soybean meal in a broiler starter for a range in prices for both ingredients? To aid in answering this kind of question, one can develop a "price map." Using the chart and the price information, one can specify the optimum formulation for a particular diet given any set of prices for the two ingredients being compared.

When there are more than two very close ingredient substitutes, one can no longer use a two dimensional graphic representation to indicate the relative value of the ingredients. This is a problem with which Dr. Hutton is currently dealing. It is hoped that it will be possible to develop a set of relatively simple tables which include the optimum formulation for any given specified ingredient situation. This procedure involves the use of "complete description programming," and it involves all the feasible feed formulations that need to be considered in any given problem.

RELATIONSHIPS OF PROCESSING VARIABLES AND CHEMICAL COMPOSITION TO THE NUTRITIVE VALUE OF FISH MEALS AS DETERMINED BY BROILER FEEDING TESTS—An extensive report on a Bureau of Commercial Fisheries study with this title was distributed at the symposium. The authors were T. D. Runnels of the University of Delaware and H. W. Nilson, Maurice Bender, D. G. Snyder and L. E. Ousterhout, formerly or now with the bureau's technological laboratory at College Park, Md.

The authors concluded: "As determined by practical broiler feeding tests in batteries, the nutritive value of commercially produced samples of fish meal could not be related to species or parts of fish utilized for production, to proximate composition of the resultant meals, or to any variables of commercial processing.

"That the broiler feeding test permitted differences to be determined in the nutritive quality of fish meals was demonstrated by results obtained by feeding an obviously burned fish meal in one series.

meals tested, with the exception of

"When incorporated into diets, all the burned meal, permitted normal growth of broilers at economical rates of feed utilization. Since so few significant differences were obtained in such an extensive study, we can conclude most likely and for all practical purposes that all fish meals of normal commercial production are a more reliable, more constant source of supplemental animal protein than has been thought previously."

Joins Feed Mill

GAINESVILLE, GA. — Winburn Derran, a veteran in the broiler business in north Georgia, has been added to the sales force of Lanier Feed Mill. He will cover north Georgia.

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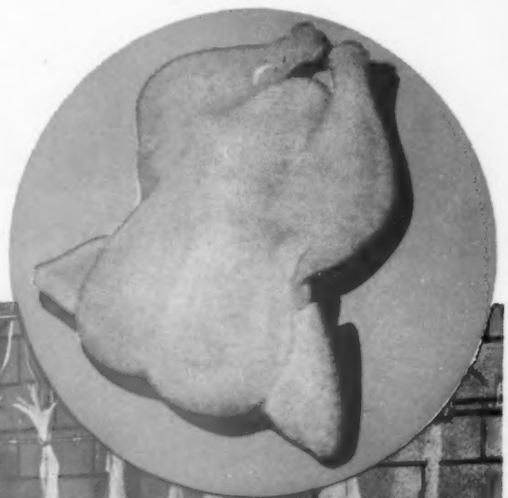

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Serviceman Has Important Role In Combating Condemnations

By Robert H. Brown
Feedstuffs Special Correspondent

The serviceman in the broiler house is taking on a more important role in combating condemnations.

The old adage that an ounce of prevention is worth a pound of cure seems to be taking hold as broiler men have now had sufficient time to survey the health situation following the wave of condemnations that have plagued the industry. The operator has now come to the conclusion that while better housing is good and part of the answer, along with vaccines and medicines once disease has struck, more attention today must be placed on prevention.

And that is where the serviceman is playing an increasingly important role because he is the "contact" man between the chicks, the feed house, the processor and the grower.

At nutrition, housing and disease conferences in at least three states recently, the serviceman has come in for his share of attention.

That he is a part of the "better management" team is an undisputed fact. He is the man who sees symptoms of disease first, and he is the man who can tell whether houses are in good condition in cleanliness and environmental control.

So important has the serviceman become recently that the University of Georgia, Clemson College and others have been holding short courses designed to better educate him.

Serviceman a Key

The serviceman is an important key in "environmental control" points out Dr. Don E. Davis, head, Poultry Diagnostic Laboratory, School of Veterinary Medicine, University of Georgia, who propounded this theme at schools conducted at Georgia and Clemson College recently.

We have signs on broiler houses stating that visitors are prohibited, yet servicemen, as well as feedmen, can carry diseases from one house to another when a few simple rules and regulations would put them at a minimum, he says.

"The serviceman drives up to a house, gets out, puts on boots and enters the house. After he is through, he goes 20 paces or five miles, as the case may be, to the next house. Does he clean his boots thoroughly between visits?" he asks. "Or does he take with him germs from the last house visited?"

Every serviceman should carry with him, in his car, or in his supply conveyances, sufficient materials to thoroughly disinfect his boots from the bottom of the soles to the top. This disinfectant should be brushed on top and bottom with special emphasis on the soles.

"Only by thoroughly cleaning the soles can he avoid carrying diseases to another house," he said.

Those "no visitors" signs on houses don't seem to apply to feed delivery men and they should, he said.

"Why should a deliveryman from a feed mill have to enter the house? Why is it necessary that vents for delivery of feed be on the inside of the house? Can't they be on the out-

Broiler House Inspection Sheet

Grower _____ Date _____

Dealer _____ Age _____

Serviceman _____ Number _____

ITEM	EXPLANATION	Good	Sat	Unsat.
GROUNDS	trash, grass, drainage, location			
ENTRANCE	lock, case of entering, foot pad, no visitor sign.			
FEED ROOM	boxes, vaccine bottles, sacs, trash, dead birds.			
LITTER	depth, moisture, caking, evenness, type, trash.			
VENTILATION	ammonia, dust, drafts, warmth, openings, house width, direction of house.			
HUMIDITY	cob webs, wetness of ceiling, walls, and floor.			
BROODERS	placement, height, temperature, litter chick guards, dead chicks.			
WATERERS	placement, height, number, sanitation, depth of water, source.			
FEEDERS	placement, height, number, sanitation, depth of feed.			
LIGHT	windows, artificial, sufficient.			
DISPOSAL	incinerated, pits, animals, etc.			
RECORDS	availability, completeness, exactness.			
SANITATION	disinfectant, buckets, brushes.			
MEDICATION	availability, instructions, execution.			
VACCINATION	completed on schedule, method.			
HEALTH	symptoms, mortality.			
FLOCK APPEARANCE	evenness, culls, comfort, color.			

Comments:

Vet. Med. Univ. of Ga.

SIGNED _____

SERVICEMAN'S FORM—This poultry serviceman's form is recommended by Dr. John E. Davis, head, Poultry Diagnostic Laboratory, School of Veterinary Medicine, University of Georgia.

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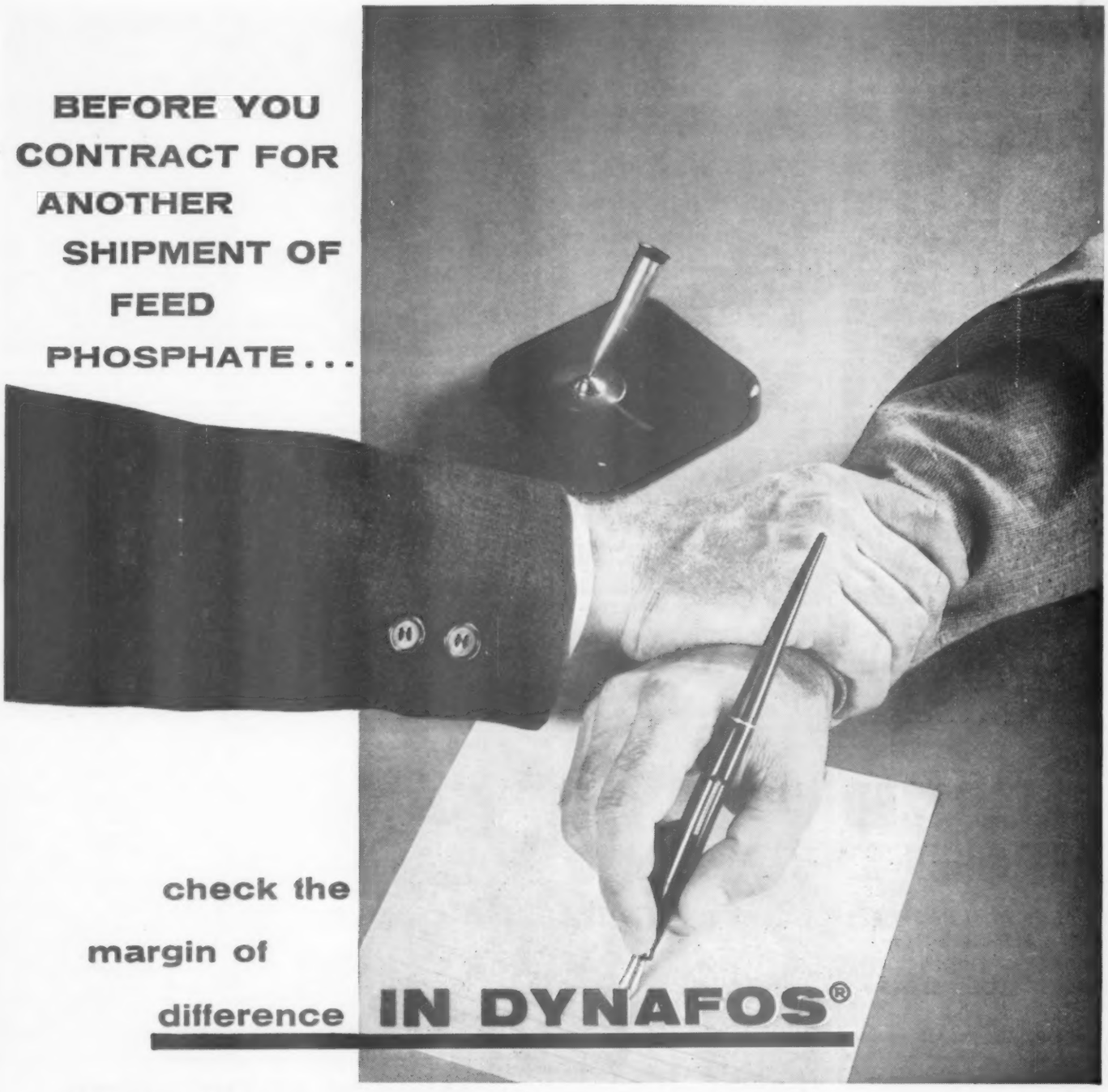

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side, thus cutting down on the number of times the man has to enter? Did you ever stop to think how many houses a driver of a bulk truck may visit in a day's time?" he asked.

Unnecessary Entering

Another man who feels the same way about servicemen and feed delivery men entering houses unnecessarily is Dr. S. C. Schmittle, director, Poultry Disease Research Center, University of Georgia.

"Why does the feed man who visits house after house, have to enter the house? It is a responsibility of the feed companies to see if they can't put a stop to some of it," he said.

Another very probable source of carrying diseases from one house to another is the practice of feed pickups.

"The feed companies come into a house and pickup leftover feed. This is carried back to the mill where it is sometimes mixed in with other feed and then carried to other growers. This is a real weakness, and something should be done about it to help control diseases," he said.

What is the ideal serviceman?

Dr. Davis thinks he is one who feels a sincere responsibility to the grower, helping him to make money, but he should be one who:

—Checks everything in the house, ventilators, trash, maintains cleanliness in general;

—Conscientously checks for symptoms of disease and knows what to look for;

—Thoroughly scrubs his boots after every visit whether the next house is five miles or five paces away;

—Sees that water is not dirty;

—One who realizes that one sick-looking bird is a potential threat to the entire flock.

Service Check List

The good serviceman should take with him a check list form which should have the name of the grower, dealer and serviceman's name.

Growers and feed houses using servicemen should have these forms prepared and one should be filled out on every visit, Dr. Davis says. Such a check list should show the condition of grounds around the houses, the feed room should be checked for boxes, vaccine bottles, sacks, trash and dead birds. Other things to be checked should be litter, ventilation, humidity, brooders, waterers, feeders, light, disposal, records, sanitation, medication, information on whether vaccinations were completed on schedule, health of birds (symptoms, mortality, etc.) and flock appearance.

The check list should have a column for the serviceman to grade the houses on a good, satisfactory or unsatisfactory basis. (See the accompanying form suggested by Dr. Davis.)

"The serviceman has got to start looking a little earlier for symptoms of disease," he says. "Such things as thickening of eye lids, for example, are signs of bronchitis. Other things to spot are slipped tendons, toe paralysis, blister lesions. The serviceman who looks for these things early is the ideal servicemen."

As soon as these symptoms are discovered, the management should be informed and proper diagnostic procedures taken.

Respiratory Disease

Since the principal cause of condemnation is respiratory disease, chiefly CRD, as Dr. J. L. Milligan, Ralston Purina Co., research division, points out, management must look to good, thorough business principles to discourage respiratory diseases. This, he said at the Virginia Feed Convention and Nutrition Conference, covers more than just good housing. It covers a batch of things, including good inspections, early spotting of symptoms by servicemen and others.

"Routine, repetitive antibiotic injection of hatchery supply flocks can reduce the number of such infected chicks. It may cost approximately

NATIONAL BROILER COUNCIL STORY—The National Broiler Council's industry relations committee was "armed" with the "New NBC Story" at a recent meeting in Washington. This photo shows Don Corbett, left, committee chairman from Waterville, Maine, explaining to a group of committee members just how the story-telling equipment works. Left to right are Mr. Corbett, Ed Givens, Richmond, Va.; Joe Frank Sanderson, NBC president, Laurel, Miss.; Paul Morgan, Guilford College, N.C.; and Robert Cobb, Jr., Concord, Mass.

½¢ per chick if there is no difference in number of chicks produced, but may still save considerably more money," he said.

At both the Clemson's fifth annual Poultry Health and Management Short Course and the disease short course at Athens, Ga., Dr. Davis preached that the field of prevention lies in:

(1) Soundness of body, vigor and constitution—a problem of genetics.

(2) Suitable environment—management.

(3) Adequate nutrition.

(4) Control of infectious diseases.

"The servicemen plays an important role in each and everyone of these," he said.

Dr. Max Colwell, Georgia Poultry Diagnostic Laboratory, Gainesville, Ga., also appealed to servicemen to spot symptoms early.

"You as servicemen when you spot a sick-looking bird should bring it in for diagnosis. You're the first to see it and if you don't do something about them, no one else knows," he said.

Servicemen, as well as poultrymen in general, often take the attitude that by the time a diagnosis has been completed the birds will be sold. He should realize that there are other birds to follow and the correct information as to type of disease may be helpful to these birds, he said.

Servicemen, in selecting birds to be diagnosed, should have as complete a history as possible to aid the diagnosis.

Clifton Douglas, Pillsbury Co., suggested the serviceman should not only check for disease, but in supplying fowl for diagnosis should have a complete cross section of the flocks. He also suggested that servicemen check every possible error of management, such as ventilation, heat, condition of brooders, etc.

Dr. William E. Clarke, Georgia Poultry Diagnostic Laboratory, said the best thing a serviceman can do is to realize time for action is at hand "as soon as sniffles are heard."

Dr. Schmittle is another who believes the serviceman is one of the most important factors in controlling condemnations.

"Contamination control is the most important thing in discouraging spread today," he said.

And he brought out another source of contamination: Pickup day, as he calls it. This is the time birds are carried away to processing plants.

"The trucks come in with dirty crates, the men go into houses. There is no telling how much disease this carries from house to house," he said.

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Tell Activities for California Group's Convention April 20-22

SAN FRANCISCO — California's "business first" feed convention, aimed at feed and grain industry management, will not be without its lighter side, according to Winslow W. Hall, Pacific Molasses Co., general chairman of the 1961 California Hay, Grain & Feed Dealers Assn. convention in San Francisco April 20-22.

Although departing completely from the traditional socially-oriented convention format to emphasize business subjects, the association promises delegates more entertainment and recreation than in the past.

Breaking up a solid day of business subjects and nationally known speakers, Pete Newell, University of California's famous basketball coach, and coach of the U.S. Olympic winners, will be the luncheon speaker on April 21. The next day conventioneers will have their own golf and bowling tournaments, utilizing the facilities of the Olympic Club oceanside course, and bowling facilities downtown. That day will be climaxed by a cocktail party and dinner dance with music provided by Ernie Heckscher's orchestra.

Monique Benoit, the San Francisco Examiner's lovelorn columnist, will be the featured speaker at the traditional Saturday morning breakfast where new officers of the association will also be introduced.

Busy industry executives are reminded by the convention committee that all of the business program is scheduled for the first day, Thursday, April 20, and that they can leave the convention after that day if they wish to skip the entertainment and recreation.

Business Speakers

Principal speakers, with their subjects, for the business sessions are: Wayne D. Nusbaum, treasurer, Ralston Purina Co., St. Louis, "Integration and Its Effects on the Feed Manufacturer;" Allen Baker, supervisor, Grain & Chemical Division, Washington State Department of Agriculture, Olympia, "The Farm Mill and How It Affects the Feed Manufacturer;" John H. Hoefer, president, Hoefer, Dietrich & Brown, Inc., San Francisco, "Advertising and Sales Development for the Average Feed Manufacturer;" Dr. James Schuh, dairy specialist, Agricultural Extension Service, University of Nevada, Reno, "Development of High Energy Rations for Ruminant Animals;" Harvey O. Banks, retiring director, California State Department of Water Resources, San Francisco, "How the New Water Bond Issue Affects You and Your Business."

The convention is scheduled for San Francisco's new $20 million Jack Tar Hotel. All events except golf and bowling take place in the hotel.

Minnesotans Run Tests On Calf Starter Flavors

ST. PAUL — Three University of Minnesota dairy research scientists say the results of two experiments they conducted "strongly suggest that flavor compounds in dry calf starters do not increase feed consumption nor rate of gain." They say that these compounds "are particularly ineffective when a very acceptable and palatable calf starter is used and where the ingredients are of high quality."

To find out if a flavored ration would promote greater feed intake and more rapid gains, Dr. Kenneth Miller, assistant professor at the university's Southern Experiment Station, Waseca, Minn.; W. A. Olson, research fellow, and Dr. J. B. Williams, associate professor, both in the department of dairy husbandry, set up a feeding trial with a group of 32 dairy calves.

Each calf was weaned early, at 29 days of age, and assigned to one of three groups. Group 1 received a basic concentrate ration of 39 parts ground shelled corn, 29 parts ground oats, 20 parts bran, 10 parts soybean meal, one part trace mineralized salt and one part steamed bone meal. Group 2 got the basic ration with synthetic sweetening and Group 3 received the basic grain mix with a synthetic sweet-milk flavored compound.

The calves were kept in individual pens and fed all the concentrates they cared to eat until they were 42 days old. After that they were fed 4 lb. per calf per day. Throughout the trial all calves had free access to water and good quality alfalfa hay.

At the end of six months all calves weighed about 350 lb. above their birth weights. The researchers report that some calves in each group showed slight variations in acceptance of flavored feeds. But as a whole, no group showed a meaningful difference in feed consumed or rate of gain.

Results of the basic experiment, the researchers say, raised another question: Could calves become accustomed to a certain flavor? So they fed the same flavors used in the initial test in another calf experiment.

To see if the calves were able to taste, small amounts of flavoring material were added to water. This water, as well as unflavored water, was offered to several calves.

"Some calves preferred the flavored water while others preferred the plain water," the Minnesota scientists report. "However, after several days most of the calves developed a desire for one type of water and drank only that type of water."

Bag Firm Announces Sales Appointment

LOUISVILLE, KY. — Jerry Agin has joined the Raymond Bag Corp.'s sales organization and will be working out of the company's Louisville office, covering southern Ohio, Indiana and eastern Kentucky.

Jerry Agin

Prior to joining Raymond Bag, Mr. Agin was connected with Formica Corp. and the Burgeson Metals Co. in Minneapolis.

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Dry matter losses for silage stored in concrete stave silos were surprisingly low for both high-moisture silage and low-moisture silage (haylage) in a South Dakota State College experiment conducted last summer.

According to Dr. L. B. Embry, experiment station nutritionist, only 4.2% of the original amount of low-moisture forage was lost and high-moisture silage losses were only 6.3% on a test made in conjunction with other studies comparing haylage and silage.

The study reveals that cement structures might be used for storing forage as low as 40% moisture for short periods at least. The quality held up well when feeding began immediately after the silo was filled and continued for the next 78 days.

Longer periods of storage were not tested but Dr. Embry said results of digestion trials indicate that the low-moisture forage from the gas-tight silo was more digestible than either high-moisture or low-moisture forage stored in concrete stave silos longer than 60 days. "These differences could be due to several factors so more work will be required to determine the importance of the storage structure," he said.

The silos used in the study were only two years old, did not have any cracks in the walls, and doors and the top were sealed with plastic. Gas-tight silos usually recover at least 98% of the dry matter.

◆

Broiler Equipment

Labor efficiency is second only to feed in importance in a broiler operation. Often it is questionable whether it "pays" to buy a certain piece of equipment. According to James C. Maness, extension poultryman at the University of Georgia, the main question to settle is what is to be done with the labor that the machine replaces.

He advises that if substituted labor is going to be used for some production job, then there are positive figures that can be used. As a rule, you can afford to invest $30-35 for a minute saved each day in a year if your labor is worth $1 per hour. Thus, by saving 10 minutes each day, you can justify a $300-350 investment. The same principle holds true for one hour saved and a $2,200 investment. Normally 10,000 broilers will justify having a mechanical feeder and any commercial size unit will command the need for automatic waterers and a bulk bin, he said.

◆

Debeaking Layers

A University of Illinois poultry specialist, S. F. Ridlen, reports that debeaking pullets does not hamper their egg production. Many farmers hesitate to debeak laying hens for fear egg production will drop, he said.

Mr. Ridlen recommends debeaking before pullets start laying. If pullets are not debeaked, however, and "picking starts, debeak immediately regardless of time of year or stage of production," he says. Picking can lead to death losses which are, of course, more important than a temporary loss in egg production.

Mr. Ridlen based his recommendations on recent debeaking tests with White Leghorns, Rhode Island Reds, White Rocks and New Hampshires. All pullets were hatched in the spring. Then several pullets in each breed were debeaked in the following fall, winter or spring.

Results showed that egg production declined right after debeaking in all groups except the White Leghorns. This was true regardless of the season. The White Leghorns did not show any drop in production.

Temporary losses, however, were overcome by the end of the test.

All breeds lost body weight during the first week after debeaking regardless of the season. Although these losses were significant, they apparently did not bother egg production.

◆

Lighter Weight Hogs

The Alberta Department of Agriculture's recent survey in central Alberta showed that too many farmers are losing money by marketing hogs at maximum finish and grade weights. Many of the animals are not only overweight but are also overfinished with shoulder and loin fat

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far in excess of that required for a top grade carcass.

Once a pig has reached 190 to 200 lb., any extra weight goes mostly into fat under the skin and over the back instead of into lean meat. A. J. Charnetski, livestock supervisor with the Alberta Department of Agriculture, stresses that farmers must accept this fact and market their pigs in good "growing condition" at weights ranging between 190 and 205 lb. The present weight range for grade A dressed hogs is 135 to 170 lb. Other factors which influence the grade an animal attains are type, length and degree of finish.

During periods of high income and high prices for competitive meats, Alberta swine producers may be able to enjoy the luxury of producing fat hogs. Under less favorable conditions, however, they cannot afford to lose $7.50 a pig—the difference between an A and a C animal of the same weight—and still stay in business, the department indicated.

Farmers can improve their hog grades by combining three basic principles—good breeding stock, balanced rations (using protein concentrates at the manufacturer's recommended rates for weaning and growing pigs) and marketing the animals at live weights of 190 to 205 lb.

◆

Rumen Development

Good calf raising methods must provide for the early development of the rumen of the dairy animal. The feeding of roughage and concentrates encourages rumen development. Dr. Richard S. Adams, extension dairy specialist, Penn State University, says instead of waiting until a calf is one or two weeks old it would be better for dairymen to provide calves with good quality hay and concentrates as soon as they are born. It is sometimes amazing, he says, to see how much feed a calf will eat at an early age when this practice is followed.

Roughage consumption may be encouraged by feeding small amounts of silage to the young calf. However, hay should also be fed in most cases.

Dr. Adams suggests using a calf starter until the calves are about four months old.

Do not neglect to make water available for all young stock, Dr. Adams continues. Lack of sufficient water alone has been shown to reduce gains by as much as 20%. For maximum consumption, keep a fresh supply of roughage and grain before the calves, he said. Stale hay or grain will discourage consumption of dry feed.

While a liquid diet alone produces a fine looking calf, it will not allow for proper development of the rumen, he stated. Rumen development will not proceed unless there is a need for it. The need can be created by getting lots of dry feed into the calf as soon as possible, he advised.

Soy Utilization Chart Featured in 'Blue Book'

HUDSON, IOWA—A soybean utilization chart which lists the many and diverse uses of soybeans features the 1961 edition of the Soybean Blue Book released recently, according to George M. Strayer, executive vice president, American Soybean Assn. The Blue Book, which is the yearbook and annual directory of the soybean industry, is published by the American Soybean Assn.

The chart can be taken out of the book and hung on the wall if desired, according to Mr. Strayer.

Another feature of the 1961 book is a complete glossary of definitions and terms used by the soybean industry, which will be valuable as a reference work, Mr. Strayer says.

A total of 148 plants processing soybeans in the U.S. including four new ones, are listed in the 1961 Blue Book. The book also lists seven Canadian and 64 foreign soybean processing plants, 17 of them unlisted last year. It is available at $3 per copy from the American Soybean Assn., Hudson.

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Factors That Affect the Granulation And Capacity in Grinding Corn, Oats And Sorghum Grain with a Hammermill

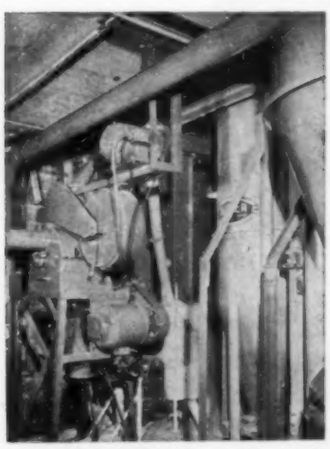
Kind of Grain
Method of Discharge
Hammer Selection
Moisture Content
Screen Area
Screen Size

By Richard J. Baker and E. P. Farrell
Kansas State University

The most used grinder in the formula feed industry is the hammermill. Today's custom feed mill, satellite mill or large terminal mill normally has one or more hammermills included as basic and integral units in its flow. In excess of 20 million tons of grain and grain by-products was mechanically processed by hammermills during the year 1960. This figure indicates that one half or more of the total tonnage output of commercial feeds in the United States will go through hammermills. Even with this wide acceptance and use of these machines, they are not fully understood as to performance and design characteristics.

This paper proposes to point out and evaluate some of the factors that may influence the production rate and granulation of the product when grinding corn, oats or sorghum grain with a hammermill. To state this another way, some of the variables controllable by you, the plant manager, the machinery manufacturer and the production man, will be evaluated. The lack of control of these variables may well be costing you money at the present time. Following are the factors that were studied and evaluated by this research:

(a) Kind of grain being ground.
(b) Gravity discharge versus pneumatically assisted discharge from the hammermill.
(c) Hammer selection.
(d) Moisture content of the grain.
(e) Screen area.
(f) Screen size (size of openings).



HAMMERMILL—This picture shows the experimental hammermill used in research work. Shown are the exhaust fan, mill, variable speed feeder drive and cyclone.

EDITOR'S NOTE: The accompanying article on hammermills was written by Richard J. Baker, extension specialist, formula feeds, Kansas State University, and E. P. Farrell, associate professor, flour and feed milling, Kansas State University. The article is contribution No. 353, department of flour and feed milling industries, Kansas State University, Manhattan, Kansas.

MATERIALS AND METHODS—Good quality corn, oats and sorghum grain were used for grinding in the testing work. A blended sample of each grain was set aside in a bin from which material was taken as required. This procedure was followed to insure uniform quality of materials throughout the testing period. Moisture content and test weight were checked and recorded on each grain at intervals during the testing. Tempered grains, for high moisture grinding tests, were allowed to sit for 24 hours before grinding to insure uniformity.

A Prater GS 5 hammermill was used for all grinding tests (see photo).

Machine specifications were:
(a) Power source—7½ h.p., 220-440 volt, 3 phase, 1,760 rpm. motor.
(b) Rotor width—12⅞" (outside hammer to outside hammer).
(c) Rotor diameter—15-11/16" (hammer tip to hammer tip).
(d) Rotor speed—3,600 rpm.
(e) Peripheral speed—14,750 fpm.
(f) Screen sizes—3/32", ⅛", 3/16", ¼" (diameter of openings).
(g) Screen area—434 sq. in.
(h) Screen location—lower 180°.
(i) Feed inlet—top—center of machine.
(j) Feed control—variable speed vane type feeder—½ h.p. drive.
(k) Exhaust fan—3 h.p. centrifugal.
(l) Hammer designs:
(1) ⅛" x 1¼" x 5-11/16" individual, three rows of 15 single hammers.
(2) ⅛" x 1¼" x 5-11/16" group, three rows of five groups, three to a group.
(3) 1/16" x 1¼" x 5-11/16" individual, three rows of 15 single hammers.
(4) ¼" x 1¼" x 5-11/16" individual, three rows of 10 single hammers.

The hammermill was equipped so that ground material could be discharged by gravity and sacked off directly under the machine or the ground material could be pneumatically conveyed from the mill to a cyclone dust collector and then sacked off for weighing.

Granulation determinations were made on the ground products by sieving 200 gm. blended samples. Four testing sieves were used to achieve particle size separations. Variations in the granulation of the ground products were measured by comparison of approximate fineness modulus values and Tyler sieve curve plots. The term granulation means the same as "fineness of grind" and is used when describing differences in the particle size of the ground product.

Grinding tests were made in triplicate on each grain, screen size and hammermill setting. Production tests were run only when the mill was operating at full load capacity as de-

Richard J. Baker

AUTHOR—Mr. Baker is an instructor in formula feeds in the department of flour and feed milling industries, Kansas State University. He received his B.S. degree in agricultural education from Kansas State University in 1956 and his M.S. degree in feed technology from Kansas State in 1960. From 1957 to 1959 he was a graduate research assistant at Kansas State University.

TABLE 1. Percentage Production Rate Increase Due to Use of Fan Discharge On the Hammermill

Screen size in.	——Grain being ground—— Grain sorghums % of Increase	Corn % Increase	Oats % Increase
3/32	19.2	9.9	22.7
⅛	10.7	7.8	20.5
3/16	8.9	4.2	15.6
¼	7.7	4.5	15.1

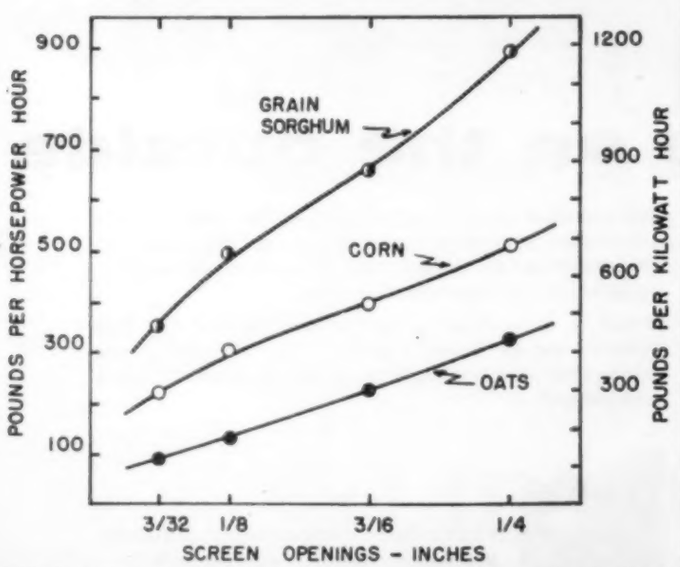


FIGURE 1. Effect of kind of grain being ground on production rate and grinding efficiency. Hammermill equipped with 1/16" individual hammers, full screen, fan discharge and operated at 3,600 R.P.M.

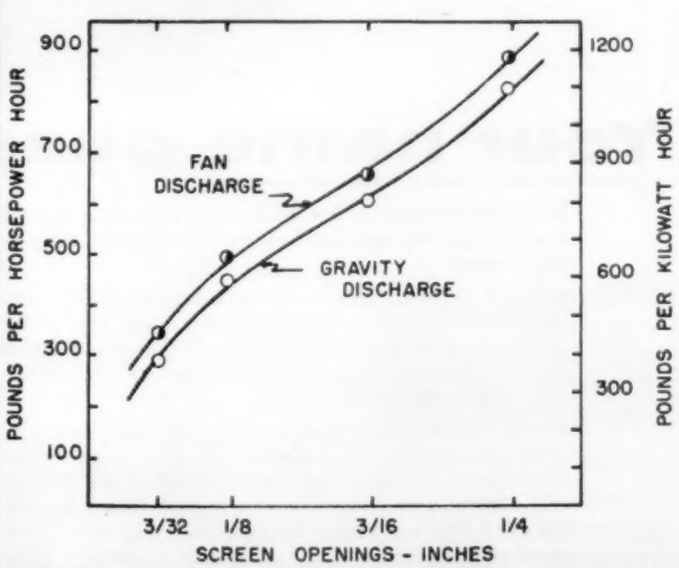


FIGURE 2. Effect of method of discharge on production rate and efficiency when grinding sorghum grain. Hammermill equipped with 1/16" individual hammers, full screen and operated at 3,600 R.P.M.

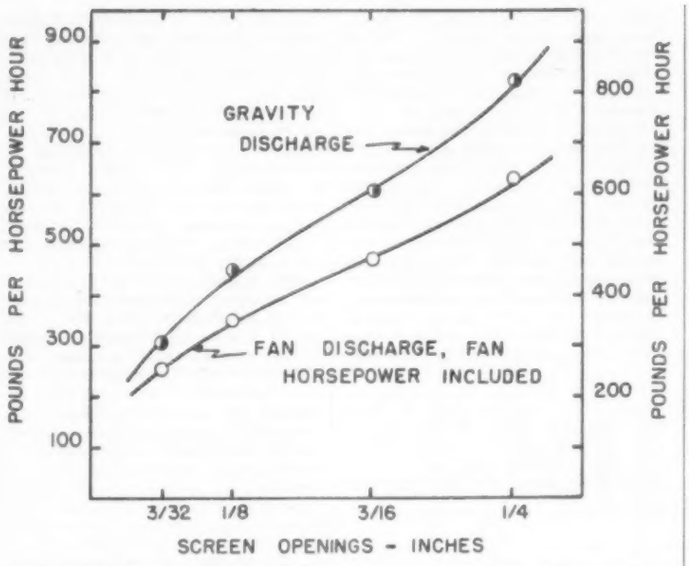


FIGURE 3. Effect of method of discharge on production rate and grinding efficiency when grinding sorghum grain. Hammermill equipped with 1/16" individual hammers, full screen and operated at 3,600 R.P.M. Note: Fan horsepower included when figuring pounds per horsepower hour on fan discharge.

termined by the electrical load on the rotor drive motor.

EXPERIMENTAL RESULTS

Kind of Grain Being Ground—The effect of kind of grain being ground on production rates when grinding with this machine is shown graphically in Figure 1.

The production curves given for corn, oats and sorghum grain are taken from data obtained when grinding normal moisture content (13-14%) grains. From these curves shown in Figure 1, it can be seen that oats grind approximately twice as hard as corn and three times as hard as sorghum grain. Note that this relationship is slightly greater for fine grinding (3/32" screen) and somewhat smaller for coarse grinding (¼" screen) of these grains. These same relationships held true for all settings of the hammermill throughout the testing period.

Grinding efficiency is used to denote production per unit of energy requirement. The terms pounds per horsepower hour and pounds per kilowatt hour are both measures of grinding efficiency.

Hourly production rates can be obtained from each graph (except Figure 3) by multiplying the pounds per horsepower hour figure plotted on the curves by 7.5. In Figure 3, the multiplier would be 10.5.

There is really nothing startling here because most production men already know that grain sorghums and corn grind easier than oats. However, we do believe it is important to note the wide variation in their relative grinding rates. This could possibly help the feed mill manager to more accurately determine actual grinding costs.

Method of Discharge—The results obtained in the testing of gravity discharge versus fan discharge as related to grinding capacity and grinding efficiency are summarized in Figures 2 and 3 and Table 1. Fan discharge is defined as that method of discharge when the pneumatic conveying fan is employed to remove the ground product from the mill and discharge into the cyclone dust collector. Gravity discharge denotes that method of discharge where the ground product drops from the machine by gravity and is collected directly under the machine.

By referring to Figure 2, it can be seen that production rate and grinding efficiency were improved by use of the exhaust fan. This graph is a little misleading, however, since the three additional horsepower needed to operate the conveying fan are not included in the calculation of pounds per horsepower hour on the curves shown. In Figure 3, the three additional horsepower on the fan drive were included in the efficiency calculations for fan discharge. Note that the more efficient job of grinding is now being done by the gravity discharge arrangement. The question is immediately raised as to whether all of the fan horsepower requirement should be charged to the grinding process. Probably not, since conveying of the ground product was also done by the fan. Remember that on gravity discharge, the ground product was collected directly under the machine, no conveying was done. If it were necessary to move the ground product horizontally and vertically from a hammermill when using gravity discharge, an additional power requirement should also be introduced. Ideally then, the fan horsepower requirement should have been broken down into two components, that portion necessary to aid in the grinding process and that portion used in the conveying of the ground material from the machine. This was not

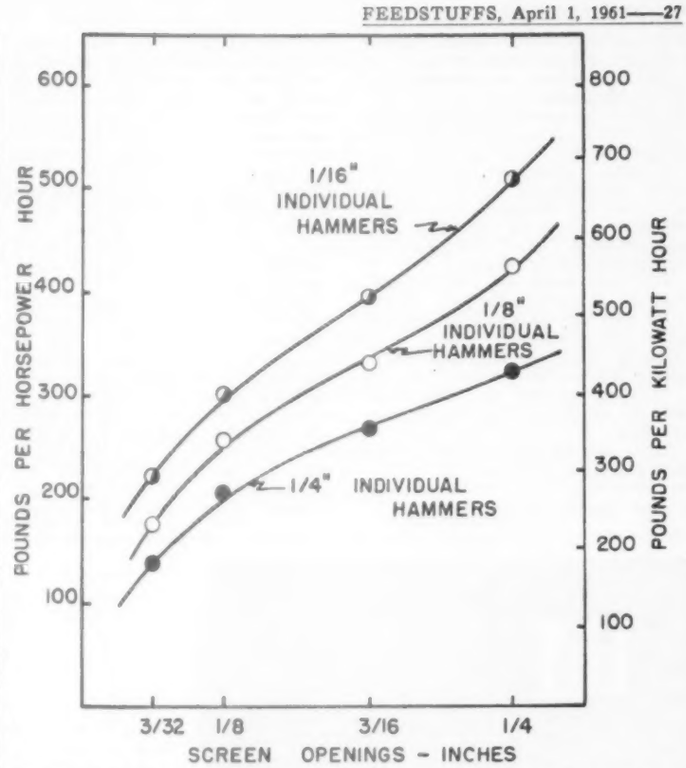


FIGURE 5. Effect of type of hammers on production rate and grinding efficiency when grinding corn. Hammermill equipped with full screen, fan discharge and operated at 3,600 R.P.M.

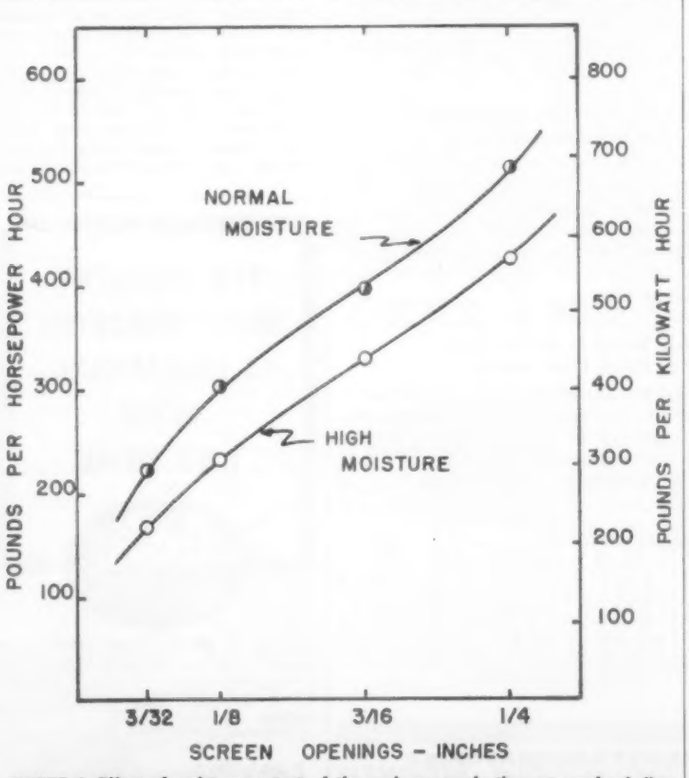


FIGURE 4. Effect of moisture content of the grain on production rate and grinding efficiency when grinding corn. Hammermill equipped with 1/16" individual hammers, full screen, fan discharge and operated at 3,600 R.P.M.

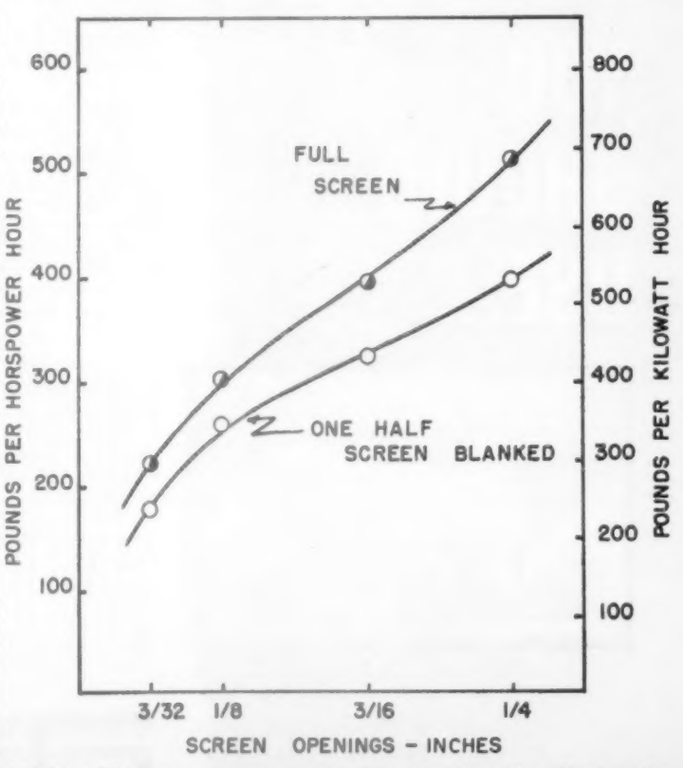


FIGURE 6. Effect of screen area on production rate and grinding efficiency when grinding corn. Hammermill equipped with 1/16" individual hammers, fan discharge and operated at 3,600 R.P.M.

done and more work is needed before a definite answer can be given.

The comparisons between the use of fan discharge and gravity discharge as they affect the production rates when grinding on the test mill are presented in Table 1.

Be sure to remember that Table 1 refers to production rates only and not to over-all differences in grinding efficiencies. From the percentage figures shown in Table 1, the following conclusions can be drawn:

(1) Oats derive the most benefit from use of the exhaust fan.

(2) The fan increases production more percentagewise when fine grinding (3/32" screen) than when coarse grinding (¼" screen).

(3) Corn benefits the least from the use of the exhaust fan during grinding.

What does this all mean? From the data gathered, it appears that it may be economical to discharge the ground product by gravity from a hammermill. True, we must admit that production rates are increased by use of the fan but as shown in Figure 3, gravity discharge may grind these grains with less total energy required. Feed mill management may want to investigate this possibility as a means of saving on power. There are presently several hammermills in use in the feed industry using gravity discharge. If gravity discharge is used, however, a small quantity of air must still be pulled through the machine.

For those men who still prefer the ease and simplicity of pneumatic handling, one change may also be suggested by this research. A negative pressure conveying system from the hammermill might be substituted for the conventional positive pressure system now commonly used. The desirability of such a change is implied by the fact that when the ground product was allowed to pass through the fan, more fines were produced than with gravity discharge. This means some power is being wasted in the fan due to this grinding action. Fan life will also be increased many-fold by changing to a negative pressure conveying system.

Moisture Content of the Grain Being Ground—The object of this phase of the research was to measure the effect of high moisture grain on production rate and granulation as compared to normal moisture content grain when grinding with the experimental hammermill. High moisture grain refers to grain with 17-18% moisture while normal moisture grain is defined as grain having 12-14% moisture content. Only grains having these two moisture levels were tested.

Figure 4 presents the results obtained when grinding corn of these two moisture levels. Notice that a very marked reduction in production rate and grinding efficiency results from the grinding of high moisture content grain as compared to those results obtained when grinding normal moisture level corn. This same relationship also held true when grinding oats and grain sorghums of these two moisture levels. Again, as we might expect, the greatest percentage reduction was measured on fine grinding. The average decrease in production rate for all four screen sizes due to the grinding of high moisture grains would be approximately: oats, 25%; corn, 20%, and grain sorghum, 12%.

The importance of quality control on incoming ingredients is pointed out by the data gathered. Feed mills which handle high moisture grains should consider that grinding rates will decrease and horsepower per ton will increase if these grains are ground. The storage life of high moisture grain, ground products, or feeds made therefrom is poor. Artificial drying might be necessary. For this reason, mills should not buy grains having high moisture content unless these grains can be purchased at a low enough price to pay for artificially drying them to reasonable moisture levels.

Type of Hammers—Probably the most significant findings of this research were brought to light while testing the four different hammer designs. The findings of this area of reseach are substantiated in work reported by Friedrich[1].

Figure 5 presents production efficiency curves for grinding corn with three different widths of hammers: 1/16", ⅛" and ¼". The curve labeled ⅛" individual hammers could also be labeled ⅛" group hammers since the differences found in the performance characteristics of these two hammer designs were so small. From Figure 5, it is apparent that as hammer thickness was decreased, production and grinding efficiency were increased. When ⅛" wide individual hammers were substituted for those hammers having ¼" width, production and grinding efficiency were increased an average of 23% for grinding corn. When 1/16" wide individual hammers were used instead of the ⅛" thick hammers, an average increase of 19% resulted. If we compare the grinding rates between the 1/16" wide individual hammers and the ¼" wide individual hammers, a staggering 48% increase in production was measured in favor of the narrower hammers. Similar results were obtained for all screen sizes, gravity and fan discharge, and on all three grains.

Part of the increased grinding efficiency is explained by a lower no load requirement (power needed to run mill empty) for the narrower hammers. However, even taking this into account, the thinner hammers are

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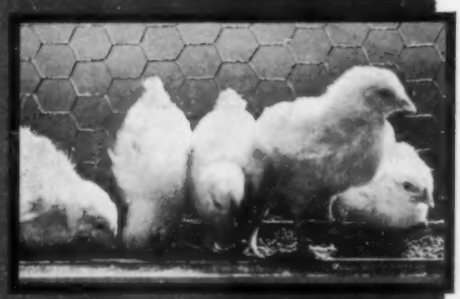

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Concord, Mass.

still doing a more efficient job of grinding with the available horsepower, than their wider counterparts.

The thinner hammers gave a more granular product than did those of the wider dimension. That is, less fines (through 32 mesh) were produced when grinding with the narrower hammers than those with greater thickness.

The only reason for not making a change to narrower hammers is the question of hammer life. If the 1/16" thick individual hammers can be sufficiently hardened to maintain their sharp edges for grinding life equal to those obtainable with thicker hammers, feed men will definitely want to change to narrower hammers in their machines since both production and granulation are improved.

Screen Area—The term, screen area, as used in this paper, is defined as the total screen surface available in the grinding chamber and not the square inches of open area for each screen size. Before discussing the experimental results, something must be said about the unusually great screen area found in this experimental hammermill. There were 424 sq. in. of screen area for each screen size on this machine. The average hammermill being used in feed mills today has 10 to 12 sq. in. of screen area per input horsepower. The experimental hammermill used in this research had approximately 40 sq. in. of screen area per horsepower or four times as much as do most production type hammermills. For this reason it is in order to caution the users of larger commercial hammermills that they might not get as good production per input horsepower with their grinders as is reported in this paper.

The curves shown in Figure 6 show that production rate and grinding efficiency were lowered markedly by cutting the available screen area in half. The term "full screen" refers to grinding done with the full 180° of available screen in use while "one-half blanked" refers to grinding done with one-half the screen area blanked off by placing sheet metal on 90° of the 180° screens between the hammer tips and the screen surface.

The results obtained when grinding with full screen as compared to grinding with one-half screen area blanked can be summarized by the following statements:

(1) Grinding with one-half screen blanked cut production rate and grinding efficiency an average of: (a) 23% when grinding grain sorghums, (b) 20% when grinding corn, and (c) 19% when grinding oats.

(2) Blanking of one-half the screen area reduced production rates more when grinding with gravity discharge than when grinding with fan discharge.

(3) The percent reduction was much greater for screens with large diameter holes than for screens with small holes.

(4) A significantly finer grind was produced when one-half of the screen area was blanked off during grinding than when grinding with full screen exposed.

The experimental results of this area of research suggest that hammermill manufacturers might want to try to incorporate more screen area into their machines since adverse effects were measured on both granulation of ground product and production efficiency when the available screen area was cut in half.

Screen Size—The easiest way to make major changes in production rates and granulation when grinding with a hammermill is by changing the size screen used in the machine. Four screen sizes (3/32", ⅛", 3/16" and ¼" diameter of openings in screens) were used for testing purposes in this research. Many other screen sizes are available for most hammermills.

The effect of screen size on grinding capacity and efficiency is pointed out by each production curve presented in this paper. By referring to Figures 1-6, it is apparent from the slope of the curves shown that production rate increases rapidly as the size of the screen openings become larger. By starting with the screen having the smallest openings (3/32") and progressing to those screens having larger openings, the following average gains in production rates were measured:

Average of All Three Grains

3/32" to ⅛"—42% increase
⅛" to 3/16"—42% increase
3/16" to ¼"—35% increase

The hourly production rate for grinding through a ¼" screen is more than twice that obtained when grinding with 3/32" screens for all three grains tested. Martin and Roberts[2] stress this relationship between fineness of grind and power consumption as found in their work on small hammermills. These figures very definitely point out the value of grinding only as fine as necessary to meet customer demands.

SUMMARY AND CONCLUSIONS

The experimental data gathered seem to indicate that:

(1) Oats grind approximately twice as hard as corn and three times as hard as milo when grains of equal moisture content are ground through the same screen sizes with a hammermill.

(2) When grinding grains through the same screen sizes with a hammermill, fan discharge will increase production rates over grinding done with gravity discharge. The percentage increase will vary with the grain being ground and the screen size but will average about 12% for all three grains and four screen sizes.

(3) Grinding with fan discharge definitely keeps the ground product cooler than when grinding with gravity discharge.

(4) It can be economically feasible to discharge the ground product from a hammermill by gravity instead of by fan discharge.

(5) Some particle size reduction occurs when the ground product passes through the fan.

(6) Grinding of high moisture grains will decrease production rates approximately 25% for grinding oats, 20% for grinding corn and 12% for grinding grain sorghums when compared to production rates attainable when normal moisture content grains are ground through comparable screen sizes.

(7) There is no appreciable change in production rates or granulation of product when grinding these three grains with ⅛" thick individual hammers or with ⅛" thick group hammers.

(8) Equal numbers of 1/16" thick

(Turn to page 32)

MOO--ORE NEWS IN FEEDSTUFFS

ARID-AIRE
specializes in
"DRYING WEATHER"
MADE TO ORDER

Why settle for a grain dryer that is "almost" right for your needs? Now with Arid-Aire you can have your choice of the style and model to match your requirements exactly. Only Arid-Aire gives you a choice of a large, carload capacity, *Terminal* model or continuous flow Models "L" and "4".

TERMINAL MODEL

ARID-AIRE's new profit maker with carload drying power. ARID-AIRE dries faster, dries more by using *all four* sides of the dryer. It uses *all* the heat. Four-side circulating and drying increases efficiency—decreases operating costs. ARID-AIRE temperature control regulates balance of heat when grain condition varies. Completely automatic and absolutely safe . . . and exclusive Terminal design operates with little if any dust or chaff discharge . . . it's truly a "clean" dryer.

2 STYLES 3 MODELS—all dry grain efficiently, economically, naturally

Don't buy any grain dryer until you have checked what Arid-Aire offers. Write today for complete information. Find out how Arid-Aire builds profits and promotes business—pays for itself.

MODEL "L", MODEL "4"

ARID-AIRE's popular horizontal models. Exclusive features: *Continuous flow design* keeps product moving and drying gently and efficiently as it moves. *Automatic operation*—no loading, unloading or full time supervision needed. *Self cleaning*—saves time and labor. *Horizontal design*—delivered completely assembled ready for fuel and electrical connections . . . ask about TRIAL PLAN!

DAYCOM, INC.
159 N. Bryant Ave., Minneapolis 3, Minnesota

Please send me complete information about Arid-Aire dryers. I am interested in:

☐ Vertical type Terminal model
☐ Horizontal style Models "L" and "4"
☐ Have Arid-Aire representative contact me

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HOW TO PRODUCE MORE AND MEATIER BIRDS AT MORE PROFIT

Do this: coordinate proper feeding and protective medication to insure improved health all the way through . . . from poult to market bird.

Hit-or-miss methods won't make a successful turkey operation. Producers need to go all-out — to *organize* every resource to insure profits.

This means extra good management — including efficient housing, up-to-date sanitation practices and proper feeding—*to keep disease out of flocks.* Disease, visible or invisible, is the turkey producer's toughest problem. It can strike at any time with disastrous results.

That is why this Coordinated Feed-Health Program was developed. This sound, practical, easy-to-follow program combines the use of formula feeds containing AUREOMYCIN® and the vaccines and medications that keep diseases *out*, lower cost of production and raise profits.

Read each step in the program. Learn *what* to do to eliminate disease, *when* to do it and *how* to do it.

Talk to your feed man. Ask him for your free folder which describes, in detail, the Cyanamid Coordinated Feed-Health Program for turkeys. If he doesn't have a copy, write direct to: American Cyanamid Company, Agricultural Division, New York 20, N. Y. ®*AUREOMYCIN is American Cyanamid Company's trademark for chlortetracycline.*

The label instructions on Cyanamid products, and on products containing Cyanamid ingredients, are the result of years of research and have been accepted by Federal and/or State Governments. Always read the labels and carefully follow their directions for use.

1. Give Aureomycin Soluble in drinking water. Start poults on AUREOMYCIN Soluble in the drinking water for first 5 to 7 days. This assures adequate early intake of AUREOMYCIN to help get poults on feed early — prevent starve-outs — guard against disease and stress — get poults off to a fast, healthy start.

2. Provide starter feed with Aureomycin. First 4 weeks in poults' lives are critical. To stop heavy losses — insure livability and fast, early growth — give a feed that contains 200 grams of AUREOMYCIN per ton. You fight sinusitis, synovitis, hexamitiasis and blue comb — cut losses — raise more healthy turkeys.

4. Stop losses from blackhead. At the first sign of blackhead, follow this procedure: (1) use a feed containing the treatment level of CYZINE® for 14 days or (2) use ENHEPTIN® in the drinking water for 7 days. Both are extremely active against blackhead. Both provide maximum safety.

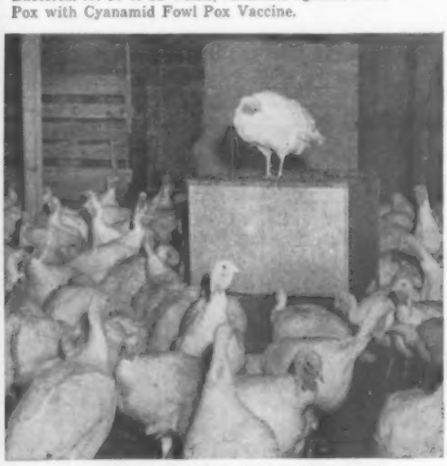
5. Market more quality turkeys. Use AUREOMYCIN Soluble or treatment feeds containing 200 grams of AUREOMYCIN per ton to reduce losses from bacterial infections at vaccination and other times of stress. AUREOMYCIN keeps birds on feed — making fast, efficient gains. You market more, better looking turkeys.

CYANAMID SERVES THE MAN WHO MAKES A BI

CYANAMID HELPS YOU SELL MORE TURKEY FEEDS WITH A COORDINATED FEED-HEALTH PROGRAM

Perhaps the most important factor in any successful turkey operation is a top-performing starter feed—one containing Aureomycin. By offering such a feed, you boost customer satisfaction and loyalty.

3. Vaccinate against these costly diseases. At 4 weeks of age, vaccinate against Newcastle disease with Cyanamid Wing-Web Vaccine. At 8 to 10 weeks, vaccinate against erysipelas with DUOVAX® Erysipelas Bacterin. At 10 to 12 weeks, vaccinate against Fowl Pox with Cyanamid Fowl Pox Vaccine.



6. More poults per turkey hen. Turkey hens should get a feed containing 100 grams of AUREOMYCIN per ton of total ration one month before and throughout the egg production season. Hens stay healthy, vigorous. Result: more eggs, greater hatchability, more poults, more profit.

CYANAMID
COORDINATED FEED-HEALTH PROGRAM

INESS OF AGRICULTURE

If anything could be called *absolutely essential* to a money-making turkey operation, it's a good starter feed.

Alert feed manufacturers are well aware of this and have perfected starter feeds of highest quality to meet the urgent need.

Why starter feed is all-important

Every turkey producer, starting a new flock, knows that he has three or four tough weeks ahead. Trouble can show up fast—at any time. Young poults are particularly susceptible to disease and stress—probably more so than any other species of livestock and poultry. *They require and must have extra protection during this critical period.*

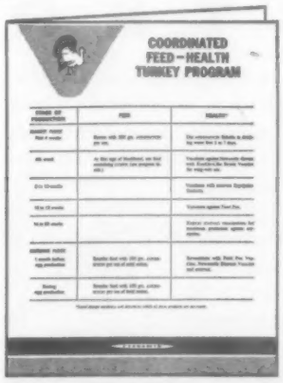
Best way to give that extra protection is with a complete starter feed that is high in energy, well fortified and palatable—and that contains the most effective antibiotic, AUREOMYCIN®, at 200 grams per ton. Such a feed minimizes the hazards of the critical period, puts your producers well on the way to a profitable return from each flock.

Recommend complete Feed-Health Program

Your starter feed, important as it is, represents just one of the ways you can serve producers with a Coordinated Feed-Health Program for turkeys. The entire, step-by-step program is described in detail in the turkey producer advertisement reproduced here.

This program is the soundest, most practical way to raise more turkeys at less cost. It can be a continuous goodwill builder for feed manufacturers and dealers who participate in it. American Cyanamid Company, Agricultural Division, New York 20, N.Y.

®AUREOMYCIN is American Cyanamid Company's trademark for chlortetracycline.



This folder describes the step-by-step Coordinated Feed-Health Program for turkeys. It is for distribution to your customers. If you need extra copies, see your Cyanamid representative or write directly to Cyanamid.

This month, your prospective customers are reading the advertisement shown here. It appears in leading turkey papers reaching 95% of all turkey growers. These customers will also be listening to well-known Farm Directors tell the benefits of the Coordinated Feed-Health Turkey Program on 40 radio stations throughout the country.

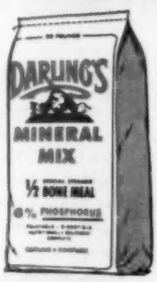
Just these 3 fill every mineral need

Now—from one manufacturer—a complete mineral line. Stock *only these three,* and you take care of every customer's mineral requirements. Profit from fast turnover, proven consumer acceptance, and continuing advertising support.

DARLING'S
MIXING MINERAL CONCENTRATE

For *custom mixing.* Contains 9% *phosphorus*—up to *3 times* that of ordinary mixing minerals. This concentrated formula, in 25 lb. bags, saves *one-half* on freight and storage. Easier handling, too. More profit for you—and a better buy for your customers.

DARLING'S
Free-Choice MINERAL MIX



Formulated with one-half special steamed bone meal . . . DARLING's mineral mix contains 6% *phosphorus.* It's *all feed,* every ingredient digestible and highly available. DARLING continues to offer its *money-back guarantee* that all livestock will eat it *free choice.*

DARLING'S
Weather-Resistant MINERAL BLOCK

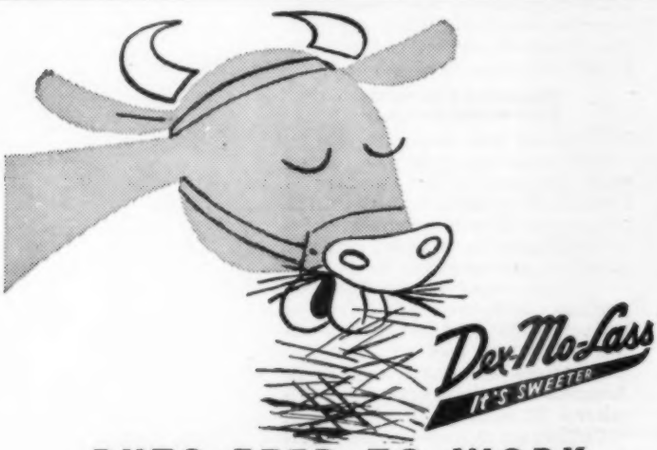
A *complete* mineral block, supplying not only the usual salt and trace minerals, but also the needed *phosphorus* and *calcium.* Contains one-half special steamed bone meal . . . 6% *phosphorus.* Guaranteed palatable. Specially treated to prevent deterioration during storage and exposure.

Order all three from your favorite distributor!

DARLING & COMPANY

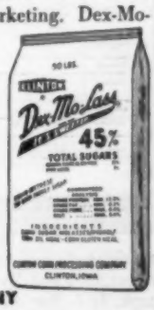
Mineral Feed Division

U. S. Yards • YArds 7-3000 • Chicago 9



PUTS FEED TO WORK FASTER

Dex-Mo-Lass, with 45% total sugars, adds a rich palatable sweetness to feed and silage, encouraging livestock to eat greater quantities and drink more water. This means rapid weight gains for early marketing. Dex-Mo-Lass is rich in these nutritious ingredients: Corn Sugar Molasses (Hydrol), Cane Sugar Molasses (Blackstrap), Corn Germ Meal and Corn Gluten Meal. Dex-Mo-Lass is packed in 50-lb. moisture-resistant bags to protect its wholesome goodness. This high quality molasses concentrate is excellent for feeding, mixing and silage.



CLINTON CORN PROCESSING COMPANY

CLINTON IOWA CLINTON, IOWA

CENTENNIAL CONFERENCE—The planning committee is shown here putting finishing touches on the Centennial Nutrition Conference program. The conference, to be held at Hotel Muehlebach in Kansas City Oct. 23-25, will be sponsored by the Midwest Feed Manufacturers Assn. and land grant colleges in Midwest's area. Among planned features of the program are an evening devoted to a veterinary nutrition discussion and a half day devoted to human nutrition with internationally known speakers invited. The planners are, left to right: Dr. Norman Jacobson, Iowa State University; Elmer Modeer, Kansas City, Spencer Kellogg & Sons; Pat Waters, Kansas City, General Mills; Everett Bierman, Ft. Wayne, Ind., Central Soya; Dr. Lloyd Washburn, Colorado State University; Dr. E. L. Stephenson, University of Arkansas; Dr. J. Russell Couch, Texas A&M College; Dr. Harold Wilcke, St. Louis, Ralston Purina Co.; Larry Alley, president MFMA; Dr. Rollin Thayer, Oklahoma State University; B. D. Eddie, Oklahoma City, Superior Feed Mills, and Dr. Tom Avery, Kansas State University.

individual hammers will grind 15-25% more pounds per hour than ⅛" thick individual or ⅜" thick group hammers when grinding through screens with equal sized openings. When ⅛" and ¼" wide hammers were compared, there was approximately a 20% increase in production capacity measured in favor of the ⅛" hammers.

(9) When grinding the same grains through equal screen size openings, 1/16" individual hammers will increase grinding rates 40% or more over those obtained with ¼" wide individual hammers.

(10) Blanking of one-half the available screen area cuts grinding capacity approximately 20% compared to grinding done with the full 180° screen area exposed for these three grains on this hammermill.

(11) Only minor changes in granulation can be made when grinding the same grains through screens having equal diameter openings by altering the hammermill design features evaluated by this study.

(12) Major changes in both granulation of product and production can be achieved by changing the size of openings in the screen when grinding corn, oats and sorghum grain with a hammermill.

Many different factors which influence the operational characteristics of a hammermill have been investigated in this research. There are still many more that could and should be evaluated. Some of these problem areas are listed below:

(a) Effect of worn hammers on granulation and production.

(b) Effect of different spacing between hammer tips and screen surface on granulation and production.

(c) Effect of number of hammers on granulation and production.

(d) Effect of peripheral speed on granulation and production.

Some of these areas are presently being studied by feed technology staff members at Kansas State University. It is our hope and goal that this paper will stimulate more and better research and that the experimental results be made available through subsequent publications.

v v

LITERATURE CITED

(1) Friedrich, Dr. Ing. W.—Der Zerkleinerungsvorgang in Hammermühlen, abhängig von den EinfluBgrößen, die Mühle, Heft 48, pp. 643-651, Nov. 26, 1959, and Heft 49, pp. 660-661, Dec. 3, 1959.

(2) Martin, J. W., and Roberts, June—Feed Grinding With Small Electric Motors; Kansas Extension Service Bulletin 87, September, 1941.

FEED CORPORATION

BOWDLE, S.D. — Plans are being worked out here for the formation of a new feed corporation which would sell stock to raise capital for a complete plant to process local feed.

Promotions Announced

MINNEAPOLIS — Promotions and new assignments for four Nutrena Feeds sales personnel have been announced here by Ralph V. Grier, general sales manager.

Named were: S. C. (Arch) Gilchrist, district sales manager for western Iowa, to swine sales supervisor in the same area; Harold R. Bruniga, district sales manager for Indiana and Michigan, to the western Iowa post, with headquarters in Ft. Dodge; Howard R. Richardson, territory sales manager in Decatur, Ill., to the Indiana-Michigan post, and Robert G. Lockwood, area salesman in Charles City, Ia., to territory sales manager in Decatur, Ill.

The Kelly Duplex Bucket Elevator is engineered from head to boot for efficient trouble-free service and long life. A quiet, high speed unit

KELLY DUPLEX BUCKET ELEVATOR

. . . it assures you a steady, uniform flow of material without slippage or back-legging . . . is available in either wood or steel, in any size, to meet your needs. Mail coupon today for free literature and full details.

The Duplex Mill & Mfg. Co., Springfield, Ohio
Without obligation, send me complete information on the Kelly Duplex Bucket Elevator.

NAME_____

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ADDRESS_____

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FEEDSTUFFS

Now in commercial use by farmers, SILOTRACIN again proves to be low-cost silage insurance

Thousands of satisfied users report Silotracin, new silage preservative with antibiotic action, prevents spoilage – protects proteins – stops offensive odors.

For several seasons Silotracin has been tested exhaustively both in laboratory and college field trials on grasses of all types. Now, after 12 months of everyday use on the farm, the farm reports are in. These reports confirm, emphatically, that the selective antibiotic action of Silotracin eliminates guesswork; that Silotracin reduces shrinkage, minimizes spoilage and loss of nutrients, stops offensive odors.

"Steers consumed almost twice as much" reports one farmer. "This is the most palatable silage we have ever fed" writes another. Again, "The silage has a mild, pleasant odor." These are the views of farmers who have *used* Silotracin, who have discovered for themselves how Silotracin–the first silage preservative using antibiotic action–helps make their silage more profitable.

Silotracin goes right to work as you fill the silo, works in the critical first 72 hours. It delivers these important advantages:

1 – Protects valuable forage proteins because its selective inhibition of protein-destroying bacteria reduces ammonia production.

2 – Reduces spoilage because antibiotic action encourages 'preserving' organic acids (lactic, acetic, propionic) needed for high quality silage.

3 – Ends offensive odors because butyric acid is virtually eliminated.

4 – Keeps silage fresh for many months.

5 – Antibiotic is destroyed before silage is fed – no traces appear in the milk.

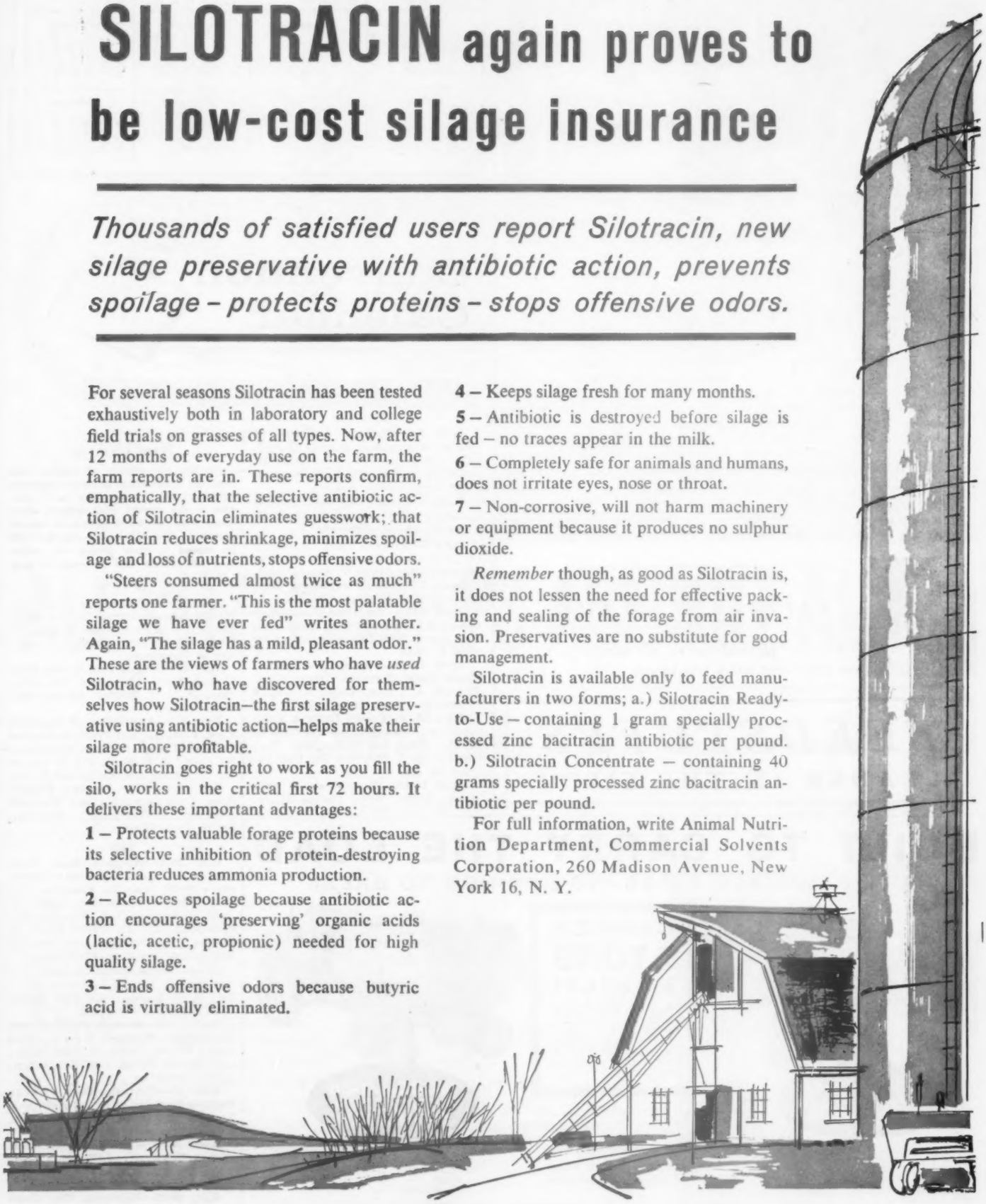
6 – Completely safe for animals and humans, does not irritate eyes, nose or throat.

7 – Non-corrosive, will not harm machinery or equipment because it produces no sulphur dioxide.

Remember though, as good as Silotracin is, it does not lessen the need for effective packing and sealing of the forage from air invasion. Preservatives are no substitute for good management.

Silotracin is available only to feed manufacturers in two forms; a.) Silotracin Ready-to-Use – containing 1 gram specially processed zinc bacitracin antibiotic per pound. b.) Silotracin Concentrate – containing 40 grams specially processed zinc bacitracin antibiotic per pound.

For full information, write Animal Nutrition Department, Commercial Solvents Corporation, 260 Madison Avenue, New York 16, N. Y.



The use of Silotracin for silage preservation is covered by U.S. Patent 2,940,857.

COMMERCIAL SOLVENTS CORPORATION

Helping you put together a high quality dry dog food at the lowest cost is *the* business of RALPH WELLS & CO. By ordering *all* your major ingredients from this *one* source . . . in cars, mixed cars, or LCL . . . your ingredient costs and inventory requirements are considerably less than when you purchase from separate suppliers at scattered locations. Because WELLS specializes in the manufacture of dog food ingredients, you can be sure of prompt delivery on fresh, full strength ingredients which are *prime* products, not by-products. You also get the bonus of WELLS' years of pioneering experience in the development of palatable pet food ingredients — and their incorporation into successful finished pet food diets. Contact RALPH WELLS & CO. today — the one best source for all your major dog food ingredients.

CORN FLAKES cooked . . . toasted
WHEAT FLAKES cooked . . . toasted
CORN KIB-LETS expanded . . . kibbled
CORN-WHEAT KIB-LETS expanded . . . kibbled
44% SOY CAKE-LETS expeller, pea-size
EXPELLER SOY BEAN MEAL and other ingredient specialties

Write or phone today for current prices and literature

RALPH WELLS & CO.

MONMOUTH, ILLINOIS

THE BEST — FOR MAN'S BEST FRIEND

CALENDAR FOR 1961-62

APRIL

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Convention Calendar

April 3-4—National Institute of Animal Agriculture; Purdue University, Lafayette, Ind.; sec., Karl D. Butler, P.O. Box 521, First National Bank Bldg., Ithaca, N.Y.

April 5—Purdue Egg Day; Purdue University, Lafayette, Ind.; David D. Jackson, Ext. Poultryman.

April 6—Feeders Day; University of Nebraska Experiment Station, North Platte; James C. Adams, Supt.

April 7—Missouri Livestock Day; University of Missouri, Columbia.

April 9-13 — American Association of Cereal Chemists; Baker Hotel, Dallas, Texas; 1955 University Ave., St. Paul 4, Minn.

April 10-12—Poultry & Egg National Board; Sheraton Towers Hotel, Chicago, Ill.; mgr., Lloyd H. Geil, 8 S. Michigan Ave., Chicago 3.

April 13-15—Pacific Dairy & Poultry Assn. Exposition and Convention; Riviera Hotel, Las Vegas, Nev.; sec., Carl E. Nall, 1304 7th St., Los Angeles 21, Cal.

April 14-15—Texas Grain & Feed Assn.; Baker Hotel, Dallas, Texas; sec., R. B. Bowden, 504 Fort Worth Club Bldg., Fort Worth 2.

April 17-18—Seventh Regional Area Convention, National Renderers Assn.; St. Paul Hotel, St. Paul, Minn.; sec., Harold Weiss, Gulf Soap Corp., Arabi, Louisiana.

April 20—Nebraska Beef Cattle Feeders Day; University of Nebraska, Lincoln; Dr. R. M. Koch, chairman, animal husbandry department.

April 20-22 — Beef Cattle Short Course; University of Florida, Gainesville; Dr. T. J. Cunha, head, Animal Husbandry & Nutrition Dept.

April 20-22—California Hay, Grain

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the columns in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

April 17-18—Tennessee Poultry Health School; Animal Science Bldg., University of Tennessee, Knoxville; conducted by Poultry Dept., University of Tennessee.

May 26—Oregon Beef Cattle Day; Oregon State University, Corvallis; chm., Dr. A. T. Ralston, Animal Husbandry Dept.

June 5-7—Association of Southern Feed, Fertilizer and Pesticide Control Officials; Lafayette Hotel, Lexington, Ky.; sec., M. B. Rowe, 203 N. Governor St., Room 304, Richmond 19, Va.

Aug. 2-4—West Virginia Poultry Assn. Convention and Festival; Moorefield, W.Va.; sec., Wilson Smith, Petersburg.

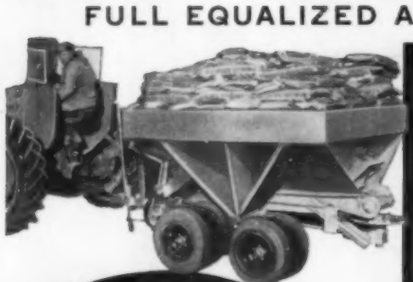
1962

Feb. 20-21—Virginia State Feed Convention and Nutrition Conference; Hotel Roanoke, Roanoke, Va.; sec., Virginia State Feed Assn., J. Paul Williams, 615 E. Franklin St., Richmond 19, or Prof. Paul M. Reaves, Dairy Science Dept., Virginia Polytechnic Institute, Blacksburg.

FEEDSTUFFS
LEADER IN THE FIELD

BUILT TO CARRY THE LOAD

FULL EQUALIZED AXLES—NO SPRINGS TO BREAK



MODEL N-48 FERTILIZER SPREADER

CARRIES 5 TONS EASILY!

Both the 4 ton Model N-48 and the 2 ton Model N-28 are shown overloaded with 5 tons of bagged fertilizer to prove load carrying capabilities.

MODEL N-28 FERTILIZER SPREADER

- Stainless steel metering gate and guides, micro-meter adjusting screw and full 12" stainless steel conveyor.
- Adequate flotation for soft fields.
- Less cutting and packing fields.
- Direct PTO fan drive gives 50 ft. spread.
- All-weather wheel drive assembly.
- Endgate in full view for easy metering gate adjustment.
- Can be pulled by any tractor.

SPECIFICATIONS

8 tires
Length—8 ft.
Capacity—4 tons
Width of Spread—50 ft.
Rate of Spread—60 to 350 lbs. per acre (gearing for higher or lower spreading rates, optional)

SPECIFICATIONS

4 tires
Length—8 ft.
Capacity—2 tons
Width of Spread—50 ft.
Rate of Spread—60 to 350 lbs. per acre (gearing for higher or lower spreading rates, optional)

WRITE, WIRE OR PHONE COLLECT

for further information about the N-48 and N-28 pull-type spreaders, plus a full line of other bulk fertilizer spreaders and bodies, bulk feed bodies, bulk and sack bodies and unloaders.

S

SIMONSEN MANUFACTURING CO.
Dept. FS QUIMBY, IOWA Phone 72

Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR YOUR FOOTED ANIMALS

ALL CITRUS PULPS ARE NOT ALIKE!

Only GOLDEN ISLE gives your customers premium quality... natural color... and uniform consistency!

"Golden Isle" Citrus Pulp is a cleaner, more palatable feed. It is produced by a special process which screens out fine citrus meal particles... then adds them back in pelletized form, providing *all* the benefits of whole citrus fruit. Result: "Golden Isle" has less fines to get up the nostrils of cattle. There's less residue remaining in the feed trough, therefore less waste. And, because of strict quality control at every step of production, you're assured of this same high quality in "Golden Isle" Citrus Pulp all year round.

But this is just part of the "Golden Isle" story. For this *premium quality* citrus feed offers dairy and beef cattle high nutritional benefits. In many areas, it can replace up to 50% of grain requirements with:

Total digestible nutrients (TDN) of 74.9%. High calcium content as well as other important minerals essential to milk production, growth and skeletal development.

Best of all, "Golden Isle" Citrus Pulp is low in cost. It's the farmer's best buy when valued on the basis of cost per 100 pounds of total digestible nutrients.

Don't let *your* customers be fooled by inferior brands of citrus pulp. Show them the difference and they'll buy "Golden Isle"... *the premium quality citrus pulp!*

CITRUS PRODUCTS DIVISION
MINUTE MAID CORPORATION
Orlando, Florida
Exclusive Sales Agent: BRADLEY & BAKER, 155 East 44th Street, New York 17, N.Y.
Atlanta • Baltimore • Jacksonville • Norfolk • St. Louis

"Golden Isle" Citrus Pulp is a quality product of Minute Maid—America's largest producer of citrus products. You can buy it, sell it and recommend it with confidence!

- effective breeding performance
- normal bone formation
- good haircoat color
- anemia protection
- active enzymes

Triangle Brand Copper Sulfate

Blended with your regular feedstuffs, Triangle Brand Copper Sulfate is one of the most effective, least expensive ways to promote healthy livestock. Customers look for extras these days. Include Triangle Brand Copper Sulfate in your feeds.

Phelps Dodge Refining Corporation
300 PARK AVENUE, NEW YORK 22, N. Y.

★ Buy and Sell Through WANT ADS ★

SELLIN' SAM — **By Jim Zilverberg**

"Oh-oh-oh—looks like Sam's had one of his most successful selling trips!"

& Feed Dealers Assn.; Jack Tar Hotel, San Francisco; sec., Leo L. Johnson, Blue Anchor Bldg., 1400 10th St., Sacramento 14.

April 21—Alabama Poultry Jubilee; Dinkler-Tutwiler Hotel, Birmingham, Ala.; sec., Alabama Poultry Industry Assn., W. L. Walsh, Box 567, Montgomery.

April 21-22—Oklahoma Grain & Feed Dealers Assn.; Biltmore Hotel, Oklahoma City; sec., E. R. Humphrey, Box 809, Enid, Okla.

April 22—Alabama Poultry Industry Promotion Dinner; Dinkler-Tutwiler Hotel, Birmingham, Ala.; sponsored by Alabama Poultry Industry Assn.; sec., W. L. Walsh, Box 567, Montgomery.

April 23-28—School of Executive Development in Business Management, Unit I; Continuing Education Center, University of Georgia, Athens; sec., Harold E. Ford, Southeastern Poultry & Egg Assn., 235 E. Ponce de Leon Ave., Decatur, Ga.

April 23-28—Grain Elevator & Processing Superintendents; Baker Hotel, Hutchinson, Kansas; sec., Dean M. Clark, 1115 Board of Trade, Chicago 4, Ill.

April 24-26—Animal Health Institute; Mayflower Hotel, Washington, D.C.; sec., D. L. Bruner, 512 Shops Bldg., Des Moines, Iowa.

April 27-29—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita; sec., Orris E. Case, 609 Wiley Bldg., Hutchinson.

April 28—Beef Cattle Day; Washington State University, Pullman; Dr. Irwin Dyer, Animal Science Dept.

April 28—Indiana Cattle Feeders Day; Purdue University, Lafayette, Ind.; chm., Dr. W. M. Beeson, animal science department.

May 4-6—Panhandle Grain & Feed Assn.; Herring Hotel, Amarillo, Texas.

May 5—Broiler Short Course and Chicken-of-Tomorrow Day; University of Georgia, Athens; Dewey McNiece, Extension Poultry Dept.

May 7-10—American Feed Manufacturers Assn. Convention and National Feed Show; Conrad Hilton

"SNOW-FLAKE" is Better Oyster Shell!

HERE IS WHY—

- Has greater eye appeal—both package and content.
- Is graded for most desirable sizes.
- No waste—thus more usable shell per bag.
- Service you will appreciate.

MAYO SHELL CORP.
P.O.Box784 Houston,Texas Tel.OR 2-9441

SEE FOR YOURSELF
-Mail the coupon below

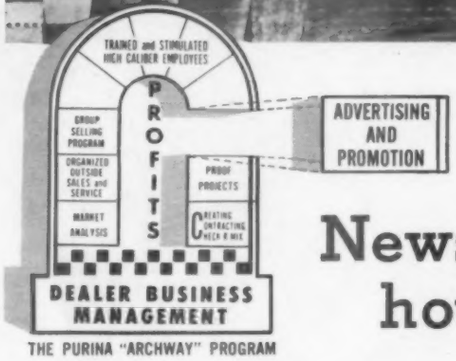
MAYO SHELL CORP.
P.O. Box 784 Houston, Texas

Send us samples and carlot quotations on Mayo's Snow-Flake Oyster Shell.

Company .....
Street .....
City-State .....
Signed .....

Meeting the challenge of the '60's with service

Purina "Sales Partner" Ira Fears and Dealer Gardner White, of Princeton Mills, discuss the position of a local advertisement with Publisher Gid S. Pool of the Princeton, Ky., Caldwell County Times.



THE PURINA "ARCHWAY" PROGRAM

Newspaper advertisements show how it pays to feed right

Many a farmer is enjoying more income from livestock or poultry because his Purina Dealer has used local newspaper advertising to tell how his neighbors have gained by good management and the *right* feeding programs.

Purina Dealers are encouraged to use local advertising. By following accepted programs, they can get half the cost of advertising paid by Purina. Purina Salesmen . . . considered "Sales Partners" by Dealers . . . help with local advertising. Often the "Sales Partner" prepares the advertising and takes care of handling it with newspapers. Purina's Regional Advertising Managers are available to set up local advertising campaigns for Dealers.

Such support enables the Dealer to identify his business with Purina's national and regional advertising. It paves the way for increased tonnage.

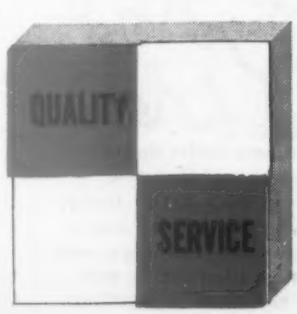
* * * *

Why the Purina Franchise Is the Most Sought Rural Retail Opportunity

1. Dealerships which follow the Purina Archway Program realize worthwhile profits on their investments.
2. Purina offers a well-rounded money-management program for Dealers.
3. The Checkerboard is rural America's best-known trademark.
4. There's a Purina Chow especially adapted to every livestock and poultry production situation.
5. Purina offers complete programs of breeding, management, sanitation and feeding.
6. Dealers are backed by the world's outstanding commercial research facilities.
7. Purina provides a complete line of research-proved sanitation products.
8. A coast-to-coast network of mills serves Purina Dealers.
9. The Purina Salesman and the Dealer have a "Sales Partnership" relationship.
10. The Ralston Purina Company is the world's largest feed manufacturer.

There are progressive, independent Purina Dealers covering most areas. If you are in one of the few remaining markets where the Purina Franchise is available . . . and if you are interested in an outstanding investment opportunity, write: RALSTON PURINA COMPANY, Department F-41, St. Louis 2, Missouri.

PURINA SALESMAN IRA FEARS has been using newspaper advertising for ten years. He interviews Purina feeders, takes pictures, prepares advertising and places it with newspapers. He has "local proof" advertising campaigns running in ten newspapers.



PURINA . . . YOUR PARTNER IN SERVING ANIMAL AGRICULTURE

NEBRASKA QUESTIONS — Following his talk at the recent convention in Omaha of the Nebraska Grain & Feed Dealers Assn., Theodore Anderson (right), deputy director for programs, Commodity Stabilization Service office, Kansas City, was questioned by some of the grain men. From left to right are Fred Marquardt, Marquardt Grain Co., Avoca, Neb.; Angar Anderson, Farmers Grain Terminal, Columbus, Neb., and W. C. Pflug, Pflug Grain Co., York, Neb.

Hotel, Chicago, Ill.; sec., W. T. Diamond, 53 West Jackson Blvd., Chicago 4.

May 7-10—Association of American Feed Control Officials; Hamilton Hotel, Chicago; sec., Bruce Poundstone, Head, Feed and Fertilizer Control Dept., University of Kentucky, Lexington.

May 14-16 — National Cottonseed Products Assn.; Eden Roc Hotel, Miami Beach, Fla.; sec., John F. Moloney, 43 N. Cleveland St., Memphis 4.

May 14-15—Missouri Grain & Feed Assn.; Hotel Coronado, St. Louis, Mo.; sec., D. A. Meinershagen, Higginsville, Mo.

May 22-23—Poultry Industry Sales Clinic; Continuing Education Center, University of Georgia, Athens; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

June 1-2 — Arizona Ranch School and Cattle Feeders Day; University of Arizona, Tucson; Dr. Bruce R. Taylor, head, Animal Science Dept.

June 4-6 — Indiana Grain & Feed Dealers Assn.; French Lick-Sheraton Hotel, French Lick, Ind.; sec., Fred K. Sale, 600 Board of Trade Building, Indianapolis 4.

June 8-11—Canadian Feed Manufacturers Assn.; National Convention; Manoir Richelieu, Murray Bay, Quebec; national secretary, W. N. Hendrick, 2901 Bloor St. W., Toronto 18, Ont.; for registrations, T. G. Sevigny, Room 100, 355 McGill St., Montreal 1, Quebec.

June 9-10—Arkansas Poultry Festival; Little Rock; mgr., Arkansas Poultry Federation, John Haid, P.O. Box 1446, Little Rock.

June 12-13—Eastern Federation of Feed Merchants; Concord Hotel, Lake Kiamesha, N.Y.; sec., Austin W. Carpenter, Box 66, Sherburne, N.Y.

June 13-16—Northeastern Poultry Producers Council Egg Quality School; Pennsylvania State University, University Park, Pa.; sec., Richard I. Ammon, 10 Rutgers Place, Trenton 8, N.J.

June 15-16—Pacific Northwest Grain Dealers Assn.; Davenport Hotel, Spokane, Wash.; sec., Merrill Sather, 418 Peyton Bldg., Spokane 1.

June 15-17 — Delmarva Chicken Festival; Harrington, Del.; Delmarva Poultry Industry, Inc., R.F.D. No. 2, Box 47, Georgetown, Del.

June 19-21—American Association of Feed Microscopists Annual Meeting; Continental Denver Motor Lodge, Valley Highway and Speer Blvd., Denver, Colo.; sec., G. M. Barnhart, Missouri State Department of Agriculture, Jefferson City, Mo.

June 19-24—Feed Microscopy Short Course, sponsored by American Association of Feed Microscopists; Continental Denver Motor Lodge, Valley Highway and Speer Blvd., Denver, Colo.; sec., G. M. Barnhart, Missouri State Department of Agriculture, Jefferson City, Mo.

June 20-21—Alabama Poultry Industry Assn.; Whitley Hotel, Montgomery, Ala.; sec., W. L. Walsh, Box 567, Montgomery.

July 14-18—Georgia Feed Assn.; Grand Bahama Club, Grand Bahama Island; sec., W. E. Merritt, Suite 1-A, 361 E. Paces Ferry Rd. N.E., Atlanta 5.

July 18-20—American Poultry Congress & Exposition; Municipal Auditorium, Minneapolis; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

July 24-28 — Southeastern Egg Quality and Grading School; Auburn University, Auburn, Ala.; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Aug. 3-4—National Soybean Processors Assn.; Edgewater Beach Hotel, Chicago, Ill.; sec., Wm. K. Self, 3818 Board of Trade Bldg., Chicago 4, Ill.

Aug. 7-9—Southeastern Management Roundtable; Continuing Education Center, University of Georgia, Athens; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 E. Ponce De Leon Ave., Decatur, Ga.

Aug. 13-18—School of Executive Development in Business Management, Unit II; Continuing Education Center, University of Georgia, Athens; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

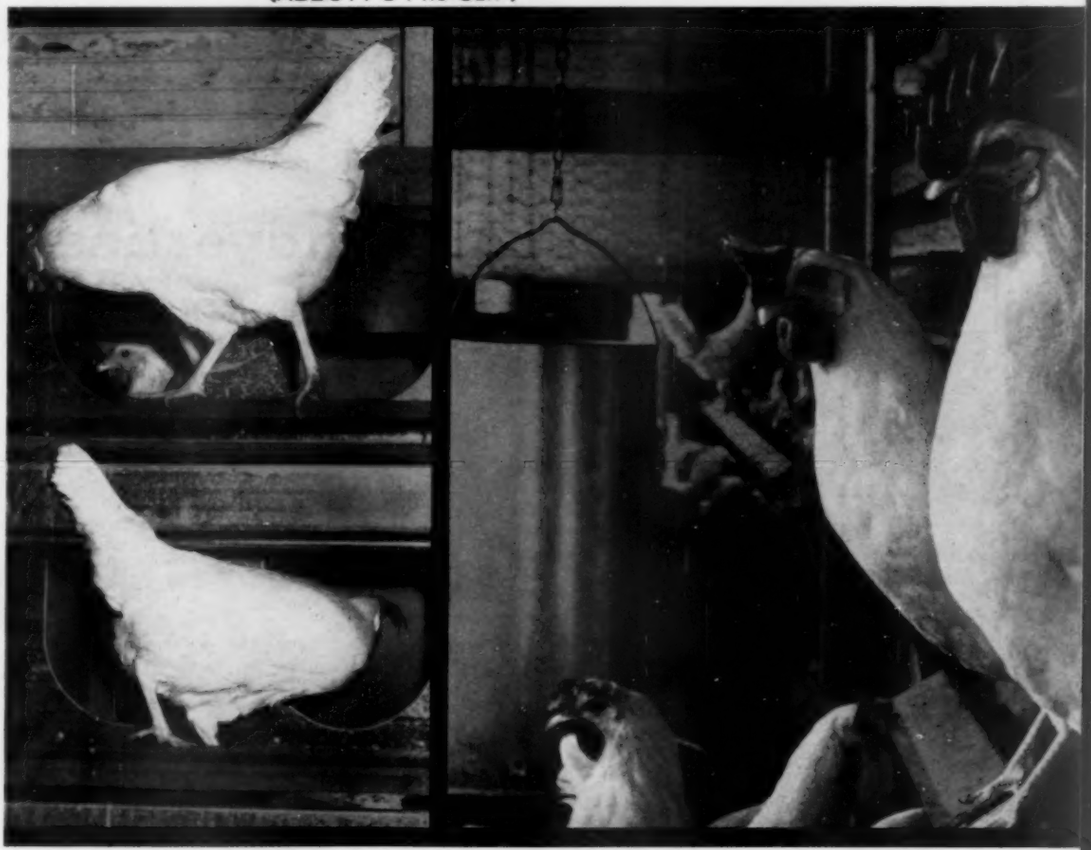
Aug. 21-22—Kentucky Feed & Grain Association; Brown-Suburban Hotel, Louisville, Ky.; sec., Jack Weber, Box 425, Lexington.

Aug. 24-26—North Carolina Feed Manufacturers Assn.; Virginia Beach,

Here's Why...

ARSANILIC ACID *is used*

(ABBOTT'S PRO-GEN®)



In test after test, Arsanilic Acid performs best under practical conditions!

When good feeds, top management and first-rate housing combine to keep hens healthy, laying percentages are almost sure to be satisfactory. But these three basic factors of good poultry raising cost money—extra money. They represent ideals . . . always desirable but not always attainable.

Arsanilic Acid Works Best When It's Needed Most. Most egg producers take a practical viewpoint. They know they can't operate like a research farm. Yet, production is the lifeline of their business . . . so, they turn to Arsanilic Acid to help keep hens healthy—keep production up.

Almost every hen is host to disease germs. Under practical conditions—during stress—hens may lack the vitality to fight off infection. That's where Arsanilic Acid comes in . . . and the tougher the battle, the harder Arsanilic Acid fights. It opposes harmful bacteria in the intestinal tract—helps protect against active disease—helps prevent laying slumps.

Have you heard the latest?

That new heifer doesn't even know that new, improved SILO-JOYe—forage flavor preservative has extra carotene retaining power —stops silage stink, too!

SOLD THROUGH DISTRIBUTORS

AGRIAIDS, Inc.

A Division of Flavor Corp. of America

5037 N. Clark St. - Chicago 14, Illinois

N.C.; sec., McNair Evans, Box 44, Mocksville.

Aug. 24-27—Georgia Poultry Institute; Rock Eagle 4-H Club Center, Eatonton, Ga.; Dewey McNiece, Extension Poultry Dept., University of Georgia, Athens.

Aug. 28-29—American Soybean Assn.; Claypool Hotel, Indianapolis, Ind.; Geo. M. Strayer, Hudson, Iowa.

Sept. 11-13—Feed Production School; Continental Hotel, Kansas City; sponsored by Feed Production School, Inc., pres., Lloyd Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Sept. 19-21—Marketing Seminar for Feed Manufacturers; Morrison Hotel, Chicago; Sales Executives Council, American Feed Manufacturers Assn., W. E. Glennon, president, 53 W. Jackson Blvd., Chicago.

Sept. 24-26—Southeastern Feed Production School; Continuing Education Center, University of Georgia, Athens; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 Ponce De Leon Ave., Decatur, Ga.

Sept. 27-29—National Feed Ingredients Assn.; Lake Lawn Lodge, Delavan, Wis.; sec., I. Levin, 517½ E. Locust St., Des Moines 9, Iowa.

Sept. 27-29—Pennsylvania Millers & Feed Dealers Assn.; Hotel Hershey, Hershey, Pa.; sec., D. W. Parke, P.O. Box 329, Ephrata, Pa.

Sept. 28-29—Arkansas Formula Feed Conference; University of Arkansas, Fayetteville; Dr. E. L. Stephenson, animal industry and veterinary science department.

Oct. 3-5—Northeastern Poultry Producers Council Exposition and Convention; Farm Show Bldg., Harrisburg, Pa.; sec., Richard I. Ammon, 10 Rutgers Place, Trenton 8, N.J.

Oct. 4-6—Texas Nutrition Conference; Texas A&M College, College Station; chm., Dr. J. R. Couch, Poultry Science Dept.

Oct. 10-11—Iowa Poultry Convention; Veteran Memorial Auditorium, Des Moines; sec., Iowa Poultry Assn., LeRoy Kruskop, 535 E. Lincoln Way, Ames, Iowa.

Oct. 15-20—School of Executive Development in Business Management, Unit III; Continuing Education Center, University of Georgia, Athens; sec., Southeastern Poultry & Egg Assn., Harold E. Ford, 235 Ponce De Leon Ave., Decatur, Ga.

Oct. 23-25—Centennial Nutrition Conference; Hotel Muehlebach, Kansas City 5, Mo.; sponsored by Midwest Feed Manufacturers Assn. and Land-Grant Colleges in Midwest's area; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Oct. 24-25—Virginia State Poultry Federation; Hotel John Marshall, Richmond, Va.; sec., J. Paul Williams, 615 E. Franklin St., Richmond 19.

Oct. 26-28—Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Head, Feed and Fertilizer Control Dept., University of Kentucky, Lexington.

Nov. 1—Animal Nutrition Research Council; Shoreham Hotel, Washington, D.C.; sec., Dr. Philip Derse, Wisconsin Alumni Research Foundation, 506 Walnut St., Madison 5, Wis.

SALES AWARDS—Over 2,000 Kent dealers, their staffs and wives received a verbal and musical "thank you" from Kent Feeds for the firm's fine sales record established during 1960. This "thank you" was issued at seven different banquets held in Iowa and Illinois. Photo shows Otis Joiner, left, Kent general manager, presenting a high-tonnage certificate to one of 138 dealers who achieved the highest sales volume of Kent Feeds during 1960.

Nov. 1-2—Kansas Poultry Assn.; Broadview Hotel, Wichita; sec., Harry J. Reed, Box 663, Manhattan.

Nov. 1-3—Cornell Nutrition Conference; Statler Hilton Hotel, Buffalo, N.Y.; chm., Prof. Douglas E. Hogue, Animal Husbandry Dept., Wing Hall, Cornell University, Ithaca, N.Y.

Nov. 8-9—Illinois Feed Assn.-Illinois Poultry and Hatchery Federation joint convention; Springfield Armory, Springfield; sec. I.F.A., Dean M. Clark, 141 W. Jackson Blvd., Chicago 4; sec. I.P.H.F., Aubrey Harless, Shelbyville, Ill.

Dec. 6-7—Missouri Poultry and American Poultry & Hatchery Federation Midwest Quickie Convention; Hotel Continental, Kansas City, Mo.; sec., Missouri Poultry Improvement Assn., E. M. Funk, Box 568, Columbia, Mo.

1962

Jan. 29-31—Southeastern Poultry & Egg Assn.; Municipal Auditorium, Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Feb. 4-6—Wyoming Grain, Feed & Seed Dealers Assn.; Townsend Hotel, Casper, Wyo.; sec., Everett L. Berry, Box 118, Sheridan, Wyo.

Feb. 5-7—Association of Southern Agricultural Workers; Jacksonville, Fla.

Feb. 14-15—Pacific Northwest Feed Mill Production School; Chinook Hotel, Yakima, Wash.; sponsored by Washington State Feed Assn.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 16—Washington State Feed Assn., annual convention; Chinook Hotel, Yakima, Wash.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Aug. 13-18—12th World's Poultry Congress; Show Grounds of the New South Wales Royal Agricultural Society, Sydney, Australia; Dr. Cliff D. Carpenter, chairman, U.S. Participation Committee, 1207 Emerald Bay, Laguna Beach, Cal.; Dr. A. William Jasper, secretary, c/o AFBF, 2300 Merchandise Mart, Chicago 54, Ill.

in so many 1961 layer feeds!

Low Cost—Big Returns. Arsanilic Acid is the low-cost production builder that helps hens fill more egg baskets any time of year. It costs only a couple of pennies per hen per year—costs so little your customers can't afford to be without it. In a 12-month feeding trial in Michigan, a good ration plus Arsanilic Acid produced 15.7% more eggs. Yet, an increase of only two eggs a day per 1,000 hens paid for the Arsanilic Acid.

Useful In All Types Of Feeds. Every year, more egg producers are asking for low-cost Arsanilic Acid in all their poultry feeds. Not because they're trying to replace good feeds, good management and good facilities with medication, but because they know that, under practical conditions, Arsanilic Acid-fed hens stay healthier and lay better.

Available In Two Convenient Forms. Arsanilic Acid is available in pure form or in premix form (one pound of premix is enough for one ton of complete feed). It's manufactured by Abbott and sold under the trade name PRO-GEN®. Ask your Abbott man for details, or call Abbott Laboratories, Chemical Marketing Division, North Chicago, Illinois. 101585

Almost Every Hen Needs Arsanilic Acid

ABBOTT LABORATORIES
CHEMICAL MARKETING DIVISION
NORTH CHICAGO • MONTREAL

Whatever Your **CONVEYING PROBLEM**

Screw Conveyors
Belt Conveyors
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Ribbon Blender Mixers
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General Sheet Metal Work

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Get More of the Mineral Sales Volume in Your Area with

SO-RITE **LIVESTOCK MINERALS**

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★ HORSES ★ POULTRY

HAVE A COMPLETE PROGRAM

- Complete Line of Formulas for all Livestock and Poultry
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SUPERIOR POTENCIES • LOWER IN PRICE THAN OTHER COMPARABLE PRODUCTS
Select Dealer Territories Available

Write LET US PROVE THE VALUE OF OUR PRODUCT AND PROGRAM

SO-RITE . . . MARSHALLTOWN, IOWA

Washington Perfecting Test for Lignin in Forage

PULLMAN, WASH.—A team of Washington State University scientists is perfecting a new forage test for the woody fiber, lignin, that should help keep cows from going hungry and their owners from going broke, it was reported.

The experimental new method converts the lignin in hay, grass or silage to a water-soluble derivative and then measures the amount through the use of ultra-violet light.

When perfected, the WSU ultra-violet test for lignin will pave the way for general adoption of a lignin index for the energy value of feed, according to the university.

Dairy or livestock producers could then use the lignin index to balance feed rations and protect their herds from hidden hunger and a resulting slump in meat and milk production.

The new method for measuring lignin was developed by Dr. R. R. Legault, Troy Scott and Eva Csiba of WSU's agricultural chemistry staff. Researchers from agricultural engineering and animal and dairy science cooperated in the study.

General adoption of a lignin index for forages has been delayed because the procedures developed to date for lignin analysis have been very time consuming, Dr. Legault said. The WSU test offers hope of removing this road block.

Test Procedure

Steps in the WSU ultra-violet test for lignin include grinding the forage to talcum powder fineness, removing the fat and color, digesting the residue in an alkaline hydrosulfite solution for three hours at 392° F., diluting the reaction mixture and measuring for optical density with ultra-violet light. The density rating is then converted into the lignin index for the forage sample.

The test involves the use of a mill for coarse grinding, an impact machine for fine grinding, a hypodermic syringe fitted with special plastic tubing, a centrifuge, 10 ml. ampules, especially designed screw-type, gas-tight brass cartridge containers, a specially designed rotary heater, and a machine for ultra-violet spectrophotometry.

One of the most difficult steps in the test was devising an economical method for holding the powdered forage in the hydrosulfite solution at high heat for a long period of time.

An inexpensive way had to be found to protect the thin glass ampules from breaking during the process. Dr. Legault solved the problem with the aid of John Guptill, an instrument maker on WSU's natural sciences staff. At Dr. Legault's request, Mr. Guptill designed the gas-tight, screw-top brass cartridge holders to encase the ampules while in the oven. Pressure on the fragile glass ampules was equalized by having water in the cartridge as well as in the ampule. The gas-tight design provided a perfect seal which prevented water vapor from leaking out of the cartridge and upsetting the equalized pressure.

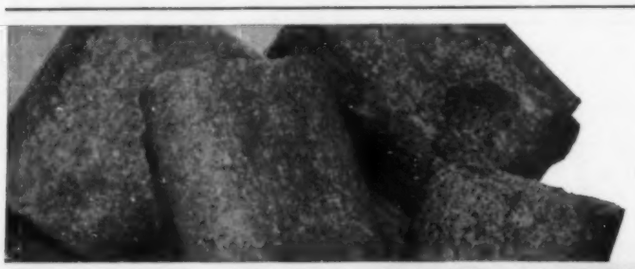
J. Roberts, chairman of WSU's department of agricultural engineering, designed the rotary heater used in the test.

The new method is now being tested with a wide range of forages using conventional animal feeding trials as the standard. Animal and dairy scientists and agronomists are cooperating in this phase of the research, Dr. Legault said.

Elect Executives

NEW YORK—Three new principal executive officers of Hooker Chemical Corp. were elected at the organization meeting of the board of directors held in New York City following the annual stockholders' meeting.

Thomas E. Moffitt, company president since November, 1957, was elected chairman of the board and chief executive officer. Succeeding him as president is F. Leonard Bryant, who had been executive vice president. Thomas F. Willers, formerly a vice president of the corporation, now becomes executive vice president.



THE PF KRAFTPACKER

lets you package cattle cubes like these

AND ALL OTHER TYPES OF PELLETED FEEDS

with an accuracy of 4 oz. + or –

WITHOUT CRUMBLING

WITHOUT BREAKING

The Kraftpacker is the most versatile, most accurate high speed automatic packer in its price class. Standard models for 25 lb. to 100 lb. bags—and for 50 lb. to 200 lb. Special models for special uses.

Hundreds of Kraftpackers are giving excellent service in 31 states and many foreign countries.

We'll send you a brochure, of course . . . write Dept. PF61 . . . better yet, why not ask us to arrange for a free demonstration?

Exclusive Sales Agents

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Use STABIMIX A in Swine Feeds, too, because increased vitamin A intake results in higher liver storage... which, in turn, means better swine health, better production... and more pigs per litter.

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FEEDSTUFFS

1961 FEEDSTUFFS ANALYSIS TABLE

Copyright 1961, by Charles H. Hubbell

This chart is published to assist feed manufacturers and students of nutrition in formulating feeds. The values given are not average, but carry a "margin of safety" so that the feed should contain at least as much protein, fat, minerals and vitamins, and not as much fiber as the final calculations show.

Protein %	Fat %	Fiber %	Calcium %	Phosphorus %	Ash %	FEEDSTUFF	Poultry: Productive energy Cal./lb.	Poultry: Metabolizable energy Cal./lb.	Ruminant T.D.N. %	Milligrams Per Lb.: Riboflavin	Niacin	Pantothenic acid	Choline	Amino Acids: Arginine %	Lysine %	Methionine %	Cystine %	Tryptophane %	Glycine %
20	2.5	18.0	1.70	.30	12.0	Alfalfa leaf meal (dehy.) ...	350	720	56	7.00	16.0	15.0	500	.9	1.1	.45	.35	.35	1.0
20	2.5	18.0	1.70	.22	12.0	Alfalfa leaf meal (suncured).	350	720	56	6.0	16.0	12.0	500	.9	.90	.45	.35	.35	1.0
17	2.0	26.0	1.40	.20	11.0	Alfalfa meal (dehydrated) ..	300	620	54	6.5	14.0	13.5	400	.8	.9	.40	.30	.27	.9
15	1.5	30.0	1.30	.20	9.2	Alfalfa meal (dehydrated) ..	240	450	51	5.0	12.0	12.0	400	.7	.70	.35	.27	.27	.8
13	1.5	33.0	1.20	.20	9.0	Alfalfa meal (either type) ..	230	350	49	4.0	9.0	10.0	300	...	...	...	...	...	...
11.5	1.8	6.5	.06	.40	3.0	Barley	800	1,280	76	0.70	24.0	2.5	450	.5	.5	.18	.18	.16	.4
9.0	1.8	6.0	.05	.30	3.0	Barley (Pacific Coast)	800	1,300	78	0.50	20.0	2.5	400	.48	.3	.15	.15	.12	.3
21	1.0	4.5	.10	.40	6.0	Beans (navy cull)	450	600	78	1.00	12.0	.5	760	1.4	1.5	.20	.18	.24	...
8	0.5	21.0	.60	.05	3.8	Beet pulp, dried	200	300	68	0.30	6.0	.5	370	.3	.6	0.0	...	.10	...
80	1.0	1.0	.28	.28	6.0	Blood meal	1,010	1,300	61	0.70	14.0	.5	300	3.5	6.3	1.00	1.40	1.10	4.5
24	6.0	16.0	.20	.45	4.0	Brewers dried grains	1,000	1,150	67	0.30	18.0	3.9	700	1.3	.90	.28	.48	.30	...
45	1.0	2.7	.10	1.40	7.0	Brewers dried yeast	700	1,100	70	15.0	203.0	50.0	1,750	2.2	3.00	1.00	.50	.81	1.7
11	2.0	11.0	.08	.30	2.1	Buckwheat	820	1,200	62	0.20	20.0	5.0	...	1.0	.7	.18	...	.18	...
32	5.0	0.3	1.30	1.00	10.0	Buttermilk, dried	780	1,250	84	12.00	4.0	13.0	550	1.0	2.20	.67	.37	.41	...
6	2.5	14.0	1.90	.10	7.0	Citrus pulp, dried	420	600	75	1.00	9.0	5.2	310	.28	.20	.08	.11	.06	...
20	6.0	12.0	.17	.60	7.0	Coconut oil meal	600	800	77	.60	13.0	3.0	500	2.2	.50	.30	.20	.2	...
8.6	3.8	2.5	.01	.25	1.5	Corn (yellow)	1,145	1,580	80	.50	9.7	2.2	200	.35	.20	.18	.16	.07	.30
7	3.0	8.0	.04	.20	1.5	Corn & cob meal (yellow) ...	900	1,290	73	.40	7.2	2.0	160	.3	.16	.15	.12	.05	.24
2.3	0.4	33.0	.11	.04	1.5	Corn cobs	...	240	45	...	...	...	...	...	...	...	...	...	...
20	1.0	11.5	.03	.40	2.8	Corn germ meal (wet milled)	840	...	70	2.00	19.0	1.5	800	1.1	.9	.40	.32	.26	1.1
22	1.5	10.0	.30	.70	8.5	Corn gluten feed	590	900	76	1.0	30.0	5.8	500	.8	.73	.30	.37	.20	1.5
42	1.5	4.5	.10	.40	4.0	Corn gluten meal	840	1,500	80	0.70	20.0	4.5	150	1.4	.75	1.00	.68	.21	1.5
24	0.3	0.0	.04	1.5	8.5	Cond. Ferm. Corn Extractives.	...	...	...	2.3	370.0	10.8	615	1.2	1.0	.54	.49	...	...
36	4.0	16.0	.15	1.00	7.0	Cottonseed meal	580	...	64	1.40	15.0	4.7	1,200	2.7	1.4	.54	.78	.45	2.1
41	4.0	13.0	.15	1.00	7.0	Cottonseed meal	690	1,100	73	1.80	17.0	6.5	1,200	3.0	1.6	.60	.85	.50	2.4
41	1.5	13.0	.15	1.10	7.0	Cottonseed meal (solv.)	560	1,000	66	2.00	20.0	6.5	1,200	3.0	1.6	.60	.85	.50	2.4
27	8.0	13.0	.09	.35	3.2	Dist. dr. grains (light) (corn)	880	...	82	1.5	19.0	3.0	900	1.0	.90	.40	.18	.20	.1
27	8.0	9.0	.12	.68	5.0	Dist. dr. gr., with sol. (corn)	890	1,200	80	4.0	35.0	5.0	1,200	.9	.7	.50	.35	.20	.5
27	8.0	4.0	.35	1.37	8.2	Distillers dr. solubles (corn)..	1,020	1,320	77	8.0	54.0	10.0	2,200	1.0	.9	.60	.60	.20	1.1
85	2.5	1.5	.20	.75	3.9	Feathers (hydrolyzed poultry)	800	1,150	63	.8	8.0	3.5	400	5.6	1.5	.52	2.3	.57	6.8
70	7.0	1.0	3.00	2.00	12.0	Fish meal, herring	930	1,350	73	4.00	40.0	5.0	1,800	4.0	6.3	2.00	1.10	.91	5.0
60	8.0	1.0	5.00	3.00	20.0	Fish meal, menhaden	920	1,350	71	2.00	25.0	4.0	1,500	4.0	5.30	1.80	1.00	.69	4.0
57	8.0	1.0	7.70	3.80	26.0	Fish meal, red fish	866	...	72	3.00	18.5	3.0	1,400	4.0	6.5	1.73	.59	.60	3.7
65	4.0	1.0	4.5	2.4	19.0	Fish meal, sardine	900	1,300	70	2.50	30.0	3.0	1,300	2.7	5.9	2.00	.80	.50	4.5
62.0	7.0	1.0	4.0	2.5	20.0	Fish meal, tuna	900	1,300	...	4.00	30.0	4.0	1,400	5.3	5.2	1.65	1.04	.71	4.2
63	2.0	1.0	6.50	3.50	22.0	Fish meal, white	825	...	72	4.00	30.0	3.0	700	4.2	4.3	1.65	...	.64	...
32	4.0	0.5	.10	.5	10.0	Fish solubles, 50% solids ...	440	650	42	6.00	100.0	16.0	1,300	1.5	1.7	.60	.21	.12	1.5
10	5.0	6.0	.02	.50	3.0	Hominy feed (yellow)	850	1,300	84	1.00	20.0	4.5	430	.5	.4	.28	.13	.29	.3
11	2.5	2.5	.02	.28	2.1	Kafir corn	1,080	1,450	81	.50	16.0	5.0	200	.35	.25	.18	.14	.15	.3
32	3.5	9.0	.40	.80	6.0	Linseed meal (expeller)	510	690	75	1.60	18.0	6.0	750	2.7	1.3	.84	.66	.56	...
35	0.5	9.0	.35	.75	6.0	Linseed meal (solvent)	450	640	70	1.30	20.0	6.4	700	2.7	1.3	.84	.66	.56	...
24	1.5	15.0	.20	.70	7.0	Malt sprouts, dried	600	800	71	2.30	26.0	20.0	1,000	1.0	1.1	.32	.23	.41	...
45	6.0	2.5	11.00	5.50	35.0	Meat and bone scraps	660	850	63	1.4	20.0	1.7	600	2.7	2.2	.63	.54	.27	6.3
50	6.0	2.5	10.00	5.00	29.0	Meat and bone scraps	720	900	64	1.5	21.0	1.8	750	3.0	2.5	.70	.60	.35	7.0
55	6.0	2.5	8.00	4.00	21.0	Meat scraps	760	920	66	1.6	23.0	2.0	850	3.9	3.4	.80	.66	.61	8.0
10	2.5	2.5	.02	.30	2.5	Milo maize	1,110	1,480	79	0.40	18.0	4.0	280	.34	.30	.16	.18	.08	.4
6	0.0	0.0	.10	.02	10.5	Molasses, beet	710	890	60	1.00	17.0	2.0	400	...	...	...	...	...	...
3	0.0	0.0	.50	.05	11.0	Molasses, cane	715	890	53	1.00	20.0	17.0	300	...	...	...	...	...	...
0.3	0.0	0.0	.50	.05	8.0	Molasses, corn sugar	...	...	67	...	...	...	...	...	...	...	...	...	...
12	4.0	12.0	.10	.33	4.0	Oats	760	1,190	70	.50	7.5	5.0	425	.7	.35	.18	.18	.15	.45
9	4.5	12.0	.10	.30	4.0	Oats (Pacific Coast)	800	1,200	72	.50	6.5	5.5	400	.50	.30	.16	.17	.10	.30
16	5.5	3.0	.05	.40	2.4	Oats, feed rolled, oat groats..	1,150	1,450	92	0.50	3.7	5.6	500	.9	.45	.2	.2	.18	.60
2	.5	36.5	.09	.10	6.5	Oat hulls	0.0	140	30	.50	4.5	1.3	100	...	...	...	...	...	...
3.5	1.0	32.0	.25	.20	6.0	Oat mill by-product	100	180	31	0.72	4.6	1.5	200	.2	.20	.10	...	.10	...
45	5.5	12.0	.17	.55	5.8	Peanut meal and hulls (exp.).	850	1,100	76	2.40	77.5	24.0	800	4.0	1.30	.44	.70	.48	2.3
47	1.0	13	.20	.60	4.8	Peanut meal and hulls (solv.)	760	1,000	68	2.40	77.5	24.0	800	4.0	1.40	.47	.74	.53	2.6
55	12.0	2.5	3.0	1.7	16.0	Poultry by-product meal	900	1,050	74	4.8	18.0	4.0	2,720	3.8	3.7	.96	.95	.45	2.9
13	.6	15.5	.10	1.35	16.0	Rice bran (solvent)	710	1,000	55	1.40	129.0	10.5	450	.5	.5	.24	.10	.24	...
11	12.0	4.0	.04	1.40	11.0	Rice polishings	930	1,500	81	0.90	325.0	4.5	460	.50	.50	.21	.11	.10	...
7.8	1.7	10.0	.05	.32	4.5	Rice (rough)	785	1,215	70	.5	15.0	4.0	450	.45	.25	.25	.10	.10	.8
22	0.5	37.0	.25	.50	6.0	Safflower seed meal	...	...	52	1.00	5.0	15.0	700	1.4	.35	.20	.13	.20	.7
42	7.0	6.5	2.00	1.30	12.0	Sesame oil meal	700	1,200	70	1.50	6.0	2.5	680	4.0	1.2	1.44	.59	.80	4.0
43	3.0	12.0	7.00	1.50	28.0	Shrimp meal	400	550	43	1.80	...	...	2,000	2.25	2.02	.72	.40	.39	...
33	.5	0.0	1.25	1.00	8.0	Skim milk, dried	600	1,200	80	9.00	5.0	15.0	500	1.2	2.8	.81	.42	.45	.2
24.0	3.2	9.0	.15	.65	8.0	Sorghum gluten feed	500	700	...	1.30	24.0	8.0	790	1.0	.9	.30	...	.20	...
42.0	4.3	3.5	.04	.30	1.8	Sorghum gluten meal	850	1,140	...	.70	15.0	4.0	300	1.2	.8	.60	...	.40	...
37	19.0	5.0	.25	.58	4.7	Soybeans	1,025	1,530	93	1.20	10.0	5.0	1,300	2.1	2.1	.60	.48	.42	1.9
12.0	1.5	36.0	.35	.15	7.0	Soybean millfeed	200	300	37	1.6	11.0	6.0	...	...	...	...	...	...	...
42	3.5	6.0	.20	.60	6.0	Soybean meal (expeller)	640	1,100	78	1.40	12.0	6.0	1,100	2.4	2.4	.74	.60	.50	2.3
45	.5	7.0	.25	.60	6.0	Soybean meal (solvent)	570	1,020	78	1.30	12.0	6.0	1,200	2.8	2.6	.79	.62	.53	2.4
51	.5	3.0	.20	.65	6.0	Soy meal (solv.) (dehulled)..	650	1,150	79	1.2	9.5	6.0	1,300	3.1	3.2	.86	.68	.58	2.7
60	8.0	3.0	6.00	3.00	22.5	Tankage	800	1,200	68	1.00	18.0	1.0	1,000	3.0	3.5	.71	.29	.82	6.6
48.0	2.0	2.7	.50	1.60	8.0	Torula dried yeast	700	...	70	20.0	220.0	24.0	1,300	2.6	3.8	.80	.60	.50	2.7
13.5	1.5	2.9	.05	.40	2.0	Wheat, hard	1,020	1,500	80	0.40	24.0	5.0	350	.7	.35	.20	.18	.18	.90
9.5	1.7	2.8	.05	.30	2.0	Wheat, soft western	920	1,500	80	0.40	26.0	4.5	300	.55	.32	.17	.18	.18	...
15	3.5	11.0	.10	1.20	6.5	Wheat bran	480	520	66	1.00	65.0	12.0	460	1.0	.6	.18	.19	.20	.90
17	3.5	6.0	.05	.70	4.5	Wheat shorts	720	1,200	78	0.60	40.0	7.0	450	.7	.4	.3	.20	.23	...
26	8.0	3.5	.01	1.00	5.3	Wheat germ meal	780	1,400	84	2.20	23.5	5.0	1,500	1.6	1.6	.30	.50	.30	...
15	3.5	9.0	.10	.90	5.5	Wheat mixed feed	570	780	70	0.70	50.0	6.0	450	.9	.5	.4	.2	.2	...
16	3.5	3.0	.10	.50	3.5	Wheat red dog	1,000	1,240	77	0.45	25.0	6.0	450	1.0	.6	.10	.18	.20	...
16	4.0	8.0	.10	.90	5.5	Wheat middlings	520	810	77	0.80	44.0	8.0	460	.9	.7	.25	.19	.21	.40
14	2.0	2.0	.05	.30	3.0	Wheat feed flour	1,000	1,350	87	0.45	25.0	6.0	450	.4	.3	.10	.15	.10	.60
12	.5	0.0	.80	.70	10.0	Whey, dried whole cheese ...	700	830	78	12.00	5.0	20.0	900	.4	1.00	.35	.40	.30	.70

ANALYSIS OF MINERALS—Use the figures guaranteed by the manufacturer. (Calculate ash as 100%.)

	Calcium, %	Phosphorus, %		Calcium, %	Phosphorus, %		Calcium, %	Phosphorus, %
Bone meal, steamed	24	12.0	Defluorinated rock phosphate...	34	14.5	Curacao Island phosphate	32	14.0
Bone meal, special steamed	26	13.0	Defluorinated treble phosphate..	30	18.0	Dicalcium phosphate	26	18.0
Defluor. super phosphate	31	13.0	Phosphate with colloidal clay...	18	9.0	Limestone, 98% calc. carb. and oyster shell flour..	38	00.00

Notes on the Feedstuffs Analysis Table

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List of Ingredients

The Feedstuffs Analysis Table is published annually to provide a convenient summary of the latest information on the analysis of the most commonly used feed ingredients. Only about one third of the ingredients available for formulation of feeds are listed here because of space limitations. Suppliers of ingredients not listed in this table will be happy to furnish the analysis of their products.

The analyses shown here are intended to be representative of the feedstuffs shown and do not necessarily apply to each manufacturer's production. Use the manufacturer's guarantees where they differ from those on the table.

Feed Formulation

Before one attempts to formulate feeds, he should study the nutritive requirements of the animals. Pamphlets showing the nutritive requirements for poultry and livestock may be obtained by writing the National Research Council, 2101 Constitution Ave., N.W., Washington, D.C.

Values of nutrients shown in this table are largely determined by laboratory procedures. These laboratory procedures do not always give values corresponding to biological values. Biological availability of nutrients may vary quite widely from chemical determinations, depending upon the crop, the species fed, ingredient processing variations, and other factors not completely understood at present.

Be sure in your formulation, that you consider these variabilities as well as making allowances for losses which will take place in storage before the feed is consumed, and losses which may take place in the manufacturing of the feed. Adequate fortification of feedstuffs with sources of nutrients which are known to be biologically available and stable under the conditions to which they will be subjected, is inexpensive compared with feeds that fail.

Energy and T.D.N.

Productive energy and metabolizable energy values shown in the 1961 Feedstuffs Analysis Table are for use in calculating poultry rations. These values do not apply to swine, ruminants or other species.

The T.D.N. values are for use in calculating rations for ruminants. These figures do not apply to poultry or swine rations.

Both T.D.N. and the energy values are approximations for good quality ingredients, and should be used with this fact in mind.

Poor quality, high moisture, lightweight or chaffy ingredients may vary quite widely from the values given in these columns.

There are many other factors to be considered in the formulation of rations which can have an appreciable effect on the utilization of the feed. Proper balance is necessary between the energy and protein content to achieve the desired results.

Vitamin A—Carotene

The approximate carotene content of commonly used feed ingredients is given. For convenience in formulating poultry feeds you may use the figures shown under Vitamin A to calculate the vitamin A activity obtained from the carotene. Values of vitamin A for 4-footed animals will generally run about 40% of the amount shown under vitamin A.

	Per pound Mg. carotene	Per pound Vitamin A
Dehydrated alfalfa		
20% (150,000 A guar.)	90	150,000
17% (100,000 A guar.)	60	100,000
17% (not guar.)	30	50,000
15% (not guar.)	20	33,000
13% (not guar.)	6	10,000
Yellow corn (current crop)	.9	1,500
Corn gluten feed	1.2	2,000
Corn gluten meal	2.4	4,000
Hominy feed	.6	1,000

Corn, corn gluten feed, meal and hominy will contain more carotene than shown in the table above, but much of this carotene is in the form of carotenoids with little vitamin A activity.

Vitamin B_{12}

The range of active vitamin B_{12} present in natural feedstuffs is quite wide, and it is felt that it may be unwise to count too heavily on B_{12} contributions from natural feedstuffs unless the natural feedstuffs are guaranteed to furnish B_{12}. Feedstuffs in the table which contain appreciable vitamin B_{12} are shown below.

Feedstuff	Range of B_{12} activity
Feather meal	.03-.06 milligrams/lb.
Fish meal	.03-.15 milligrams/lb.
Fish solubles	.06-.28 milligrams/lb.
Meat and bone scraps	.01-.05 milligrams/lb.
Meat scraps	.01-.10 milligrams/lb.
Poultry by-product meal	.15-.18 milligrams/lb.
Tankage	.02-.10 milligrams/lb.

Fats in Feeds

Many feed manufacturers wish to use fat in feeds. For poultry feeds figure the fat as 100% and the productive energy content as 2,875 calories per pound. Some fats may run higher or lower than this in productive energy, but this figure is generally safe to use for the average kinds of fats now used in feeds.

Be sure fats are stabilized.

Conversion Tables

Units or mgm. per gram	Units or mgm. per lb.
50	22,700
100	45,400
200	90,800
300	136,200
400	181,600
500	227,000
1,000	454,000

1 pound=454 grams
1 ounce=28.4 grams
1 gram=1,000 milligrams
1 milligram=1,000 micrograms, also called gammas (γ).
1 microgram per gram=1 part per million
.3 microgram of vitamin A=1 unit of vitamin A.

To convert milligrams per gram to milligrams per pound, multiply by 454.

To convert micrograms per gram or per pound to milligrams per gram or per pound, divide by 1,000.

To convert milligrams per pound to micrograms per gram or parts per million, divide by .454 or multiply by 2.2.

Vitamins D_2 and D_3

Irradiated yeast or plant sterols provide Vitamin D_2 which is excellent for 4-footed animals but not suitable for poultry.

Vitamin D from irradiated animal sterols (D-activated animal sterol) or that from fish liver oils provides vitamin D_3 which is suitable for both poultry and 4-footed animals.

Vitamin E

The vitamin E content of some feedstuffs is given below:

	mg./lb.
17% dehydrated alfalfa	82.0
Barley	2.3
Corn	1.5
Dist. dried solubles (corn)	7.0
Fish meal (menhaden)	9.5
Oats	1.8
Rye	7.0
Soybean meal (expeller)	2.5
Soybean meal (solvent)	.36
Wheat	8.4
Wheat shorts	8.4
Wheat germ meal	56.0
Wheat middlings	8.4

Other ingredients may contain vitamin E but the content is either low or unknown. All of the vitamin E given in the column above may not be biologically available.

Amino Acids

The old saying that "a chain is no stronger than its weakest link" certainly applies to the amino acid balance in feeds for poultry and swine. The amino acids which are most likely to limit the performance of feeds are shown in the Feedstuffs Analysis Table. Be sure you have enough of these amino acids in your feed for maximum efficiency.

Data on the amino acid content of some feedstuffs is lacking in many cases, and conflicting in other cases. An attempt has been made in this table to provide values which you may safely use in figuring amino acid calculations, but no margin of safety is figured for amino acids as has been provided for in the rest of the Feedstuffs Analysis Table.

Acknowledgement

Data for the preparation of the Feedstuffs Analysis Table have been received from many laboratories throughout the country. To the chemists and research workers who have so graciously cooperated in supplying this information, we wish to express our sincere gratitude and thanks.

Charles H. Hubbell

AUTHOR—Mr. Hubbell is a 1939 graduate of the University of Kansas in chemical engineering. He became associated with Joseph E. Seagram & Sons, Inc., and during World War II was with the War Production Board. After two years with the Des Moines Oat Products Co. he joined the Lyman Peck feed consulting firm. Since Mr. Peck's death in 1949, he has operated a feed consulting service, which is located in Des Plaines, Ill.

Grain Group to Present Awards to 33 Firms

HUTCHINSON, KANSAS—Fifty-seven trophy cups are to be awarded to 33 companies with perfect safety records in 1960 when the Grain Elevator & Processing Superintendents Assn. meets for its 32nd annual convention, April 23-28, in Hutchinson.

This is the largest number of trophies ever to be presented at this event, according to the association's safety chairman, George L. Kitchen, F. H. Peavey & Co., Minneapolis.

The awards will be made at the safety banquet held Monday, April 24, at the Baker Hotel.

Winning companies include: Central Soya Co. (two plants); Cargill, Inc. (14 plants); Harvest Queen Mill & Elevator Co.; Indianapolis Grain Warehouse Corp.; Spencer Kellogg & Sons, Inc.; Perot Malting Co.; Continental Grain Co. (two plants); Russell Miller-King Midas Mills; F. H. Peavey & Co.; The Pillsbury Co.; Farmers Grain Dealers Assn. of Iowa; General Mills, Inc. (two plants); Peavey Feed Mills; Archer-Daniels-Midland Co.; Dannen Mills, Inc.; Corn Products Co.

Van Dusen-Harrington Co. (eight plants); Louis Dreyfus Corp.; Stratton-Theis Grain Co.; The Quaker Oats Co. (two plants); Cleveland Grain Co.; Tidewater Grain Co.; Port Authority Grain Terminal; Lawrence Warehouse Co.

Joseph Schlitz Brewing Co.; Bisbee, Inc.; Carolina Grain Co.; Norris Grain Co.; Columbia Malting Co.; McPherson Terminal Elevator Co., Inc.; Morrison Grain & Storage, Inc.; Mueller Grain Co., and Anheuser-Busch, Inc.

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1961 FEEDSTUFFS ANALYSIS TABLE

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Charles H. Hubbell, Feed Consultant, Chicago

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Discussions at Texas Event Cover Grain Banks, Nutrition, Marketing and Engineering Problems

By W. R. TATUM
Special Correspondent

LUBBOCK, TEXAS—Grain banks, nutrition in grain sorghums, export marketing facilities and engineering problems were dominant themes at the seventh annual Grain Drying & Storage Conference held here recently.

More than 230 grain storage operators, who attended the meeting on the Texas Tech campus, pledged support for a $20,000 research program to help solve storage and aeration problems in the west Texas region.

The grain research proposal was made by Dale Whitlow of Happy (Texas) Elevator Co. and Dean Rea of Eunice Elevator Co., Tulia, members of the conference research committee.

Grain Banks

Grain banks as an efficient means of storing feed grains were discussed by Dr. Walter B. Rogers, Texas Tech assistant professor of agricultural economics, who pointed to growing cattle feedlot operations in this region as creating a need for such facilities.

"The livestock industry in west Texas comprises a major segment of net income for this area and it will grow larger in the next 10 years," he predicted, "up to 1¼ million animal units by 1969."

The grain bank plan is most efficient where large feed grain production and cattle feed lot operations are in proximity to each other. That's what makes the idea feasible in west Texas, he said. But, efficiency of operation in a grain bank is essential if it is to succeed.

"Grain banks" were defined as a method of storing grain at an elevator until the farmer has need of it, the cattle feeder either picks it up or has it ground and mixed into a prepared feed and then delivered to the farm or ranch as the need arises.

Dr. Rogers listed advantages to the farmers as: (1) cheaper cost per bushel when grain sorghum is used in the feed lot operation, (2) average storage cost per bushel tends to decrease as number of bushels increases, (3) no on-farm facilities means lower insurance rates, lower tax valuation, less hired help costs.

"The farmer also has the advantage of using capital he might tie up in storage facilities for investment in better machinery, for a feed lot operation, or to increase over-all farm efficiency," he noted. "He can buy off-farm storage in a grain bank cheaper than his interest on investment in on-farm storage."

Grain drying machinery and commercial fumigation also protect feeds stored in a grain bank.

Dr. Rogers listed disadvantages as: (1) farmers may not receive as high a quality of grain sorghum as they stored, (2) disease and foreign weed seed may be brought to the farm, (3) an unscrupulous grain dealer

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AMERICAN CANCER SOCIETY

TEXAS CONFERENCE—Kansas grain men at the seventh annual Grain Drying & Storage Conference in Lubbock, Texas, were Henry Dock (left), of Grain Merchants, Inc., and William I. Clifford (right), of Garvey Grain, Inc., both from Wichita. In the center is Dr. Walter B. Rogers, Texas Tech agricultural economist, who spoke on "Grain Banks in Texas."

could "short" on weights or increase the price of additives.

A local grain elevator, operating as a "grain bank," can enjoy steadier business by using facilities six or seven months out of the year, Dr. Rogers pointed out. He may also profit from sale of additives and increase customer volume with his added services.

He listed record keeping, varying grades of grain, problems in balancing rations and over-demanding customers as disadvantages.

Protein Levels in Irrigated Sorghum

A report on nutrition analysis of sorghum grains made by S. N. "Nick" Vilm of Amarillo revealed that irrigation is not helping to maintain necessary percentage levels of protein in grain sorghums.

The chief chemist for Producers Grain Corp. gave the results of an evaluation of the 1960 grain sorghum crop in which the protein levels of 62 hybrids or varieties were compared —dryland and irrigated crops.

"This is the first year that we have done much work in our laboratory with sorghum grains," he said, "and we cannot express a positive opinion from the results of one year's crop.

"Our analysis shows only a few instances where the protein contents of the irrigated sorghum grains were higher than that from dryland. Possibly this lower protein could be from the tendency to plant so many hybrids, or from the extremes of water used in irrigation.

"Possibly the same statement should pertain to the irrigation of sorghum grains as does the irrigation of wheat—that irrigation should be used as crop insurance instead of to produce maximum yields, for it does lower the protein, even after fertilization with nitrogen," he stated.

He noted that composite samples from the first year's analysis sent from Producers elevator to the feed mill showed around 9% protein—slightly over or under. (See accompanying table for complete percentages.)

Gulf Area Shipping

Feed grain growers in the Southwest will probably continue to see their product go to the Gulf area for shipping for some years to come.

Opening the Great Lakes shipping ports to the Atlantic via the St. Lawrence Seaway has not yet hurt Gulf port shipping of grain, Truitt Kennedy of Cargill, Inc., Ft. Worth, told the conference. The total amount of grain shipped from Gulf ports has risen steadily from 285 million bushels in 1956 to 553 million bushels in 1960 (or 37% of total grain exported in 1956 to 51% in 1960).

Mr. Kennedy said the 1 billion bushels per year loading capacity of the 13 Gulf elevators should be adequate to handle Gulf exports in the foreseeable future and that the low-cost truck and barge grain shipments will influence Gulf facility locations.

Protein Content of 52 Hybrids and Varieties of Grain Sorghum, Evaluated Under Dryland vs. Irrigated Conditions 1960 Crop

Results From Analysis Made in the Producers Grain Corp. Laboratory, Amarillo, Texas

Dryland—No fertilization, 5 lb. viable seed per acre.

Irrigated land—120 lb. nitrogen per acre, 10 lb. viable seed per acre.

	—Per cent protein—	
Hybrid or variety	Dryland	Irrigated
P.A.G. 435-S	10.15	9.40
P.A.G. 515-S	10.95	9.05
P.A.G. 3153-S	10.21	10.00
P.A.G. 465-S	10.57	7.05
P.A.G. 665-S	10.57	9.00
P.A.G. 625-S	10.62	8.80
Lindsey 722	10.45	10.00
Lindsey 744	10.57	7.85
Lindsey 788	10.25	8.80
Frontier 410-B	10.33	9.15
Frontier 400-E	9.87	9.80
Frontier 400-F	10.07	9.40
Frontier 410-C	9.82	9.20
Frontier 411	10.18	8.60
Frontier 410-E	10.37	8.70
Frontier 400-C	9.84	8.70
Frontier 400-B	9.62	9.05
Steckley R-108	10.33	9.50
Steckley R-214	10.57	9.70
Steckley R-111	11.20	9.60
Steckley R-213	11.07	8.65
Steckley R-103	10.51	9.15
Steckley R-106	10.00	9.90
Taylor-Evans 66	10.27	8.35
Taylor-Evans 55	10.75	9.75
Miller No. 79	9.77	9.35
Miller No. 78	10.63	10.35
Pioneer 852	10.82	9.80
Pioneer 851	11.08	11.20
Toothacres 1010	10.15	9.30
Toothacres 1020	10.25	8.50
KB 1030	10.37	9.30
KB 1040	10.30	9.95
Ranger	11.20	9.25
Red Raider	10.52	9.55
Red Raider-A	10.18	9.05
DeKalb F-63	10.51	9.10
DeKalb F-62-A	10.40	10.35
DeKalb E-56-A	10.30	10.35
Coastal	10.52	8.15
Watson H-59	10.63	9.75
MarTex Hybrid	11.10	9.80
Gartex	11.45	10.60
Texas 601	9.85	9.40
Texas 660	9.50	8.50
Texas 620	9.70	8.65
R. S. 608	10.30	9.45
R. S. 610	10.00	9.20
Amak R-12	10.90	8.10
Amak R-10	9.90	10.00
Redland Kaffir	10.45	9.45
Martin	10.95	9.70

(Samples furnished by: High Plains Research Foundation.)

Dryland—No fertilization, 3-4 lb. seed per acre.

Irrigated—150 lb. nitrogen per acre, 6 lb. seed per acre.

R-S 650	8.26	9.55
R-S 610	9.06	8.24
E-56-A	10.11	10.86
Texas 601	10.04	10.08
Texas 660	9.74	8.86
F-62-A	9.87	9.60
C-44-A	8.50	8.05
Plainsman	10.44	9.10
Martin	12.30	10.32
7078	11.04	9.70

(Samples furnished by S. W. Great Plains Experimental Station.)

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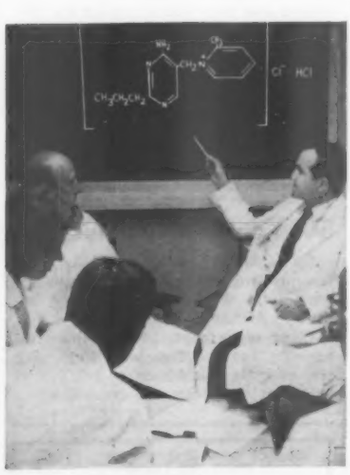

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Carefully selected from a massive screening program involving thousands of compounds, AMPROL combines a highly desirable balance of efficacy and safety. It shows promise of being a truly effective coccidiostat for use in broiler feeds. This latest addition to the Merck family of coccidiostats is really new and has undergone intensive study and testing, using the most advanced methods. It is the first coccidiostat evaluated against seven species of chicken coccidia.

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The chemical structure of AMPROL differs completely from that of any other coccidiostat—it is similar to that of thiamine. At recommended use levels, AMPROL appears to interfere with the thiamine metabolism of the coccidia, but does not affect the normal thiamine metabolism of the chicken. This mode of action is entirely different from that of any other coccidiostat in the industry's history.

SIGNIFICANT COMMERCIAL ADVANTAGES

The value of AMPROL can be measured by its efficacy and its favorable margin of safety . . . plus the fact that it permits attractive weight gains and feed conversions. What's more important, tests to date have not shown any significant ability of coccidia to develop resistance to this compound—an indication of a most promising role for AMPROL—in the management of coccidiosis—for years to come.

EFFICACY

AMPROL exhibits important activity against the most significant coccidia—especially *Eimeria tenella* and *E. necatrix*. Carefully checked against *44 strains of seven coccidial species*, AMPROL has demonstrated a favorable pattern of performance under a variety of conditions.

And in laboratory comparisons with *mixed* infections of cecal and intestinal coccidiosis (*E. tenella, E. necatrix, E. acervulina* and *E. maxima*), AMPROL *gave more protection than other coccidiostats.*

PRODUCTION PERFORMANCE

AMPROL has permitted excellent growth and feed efficiency. Results of a year of experiments under practical, commercial-type conditions have substantiated the laboratory findings.

Compared with controls, broilers on AMPROL showed higher final weights, with favorable feed conversions.

CONSISTENT PERFORMANCE

In the tests, birds were exposed to four consecutive generations of ten virulent strains of *E. tenella*. This "killer" coccidial species did not develop significant resistance to AMPROL. Based on these and subsequent tests, it is anticipated that AMPROL will give consistently good protection under most field conditions.

SAFETY

AMPROL is well tolerated up to four times its suggested use level of 0.0125%. Side effects noted above a 0.05% level are specifically related to thiamine-depletion, and are quickly reversible by giving thiamine. This simple corrective procedure is unique with AMPROL.

Layer and breeder feeding trials indicate that recommended use levels of AMPROL will not affect egg quality, egg production or hatchability.

No toxicity is observed when feeds containing AMPROL are fed to cattle, sheep, swine and dogs.

USE LEVEL

The recommended use level for most field conditions is 0.0125%.

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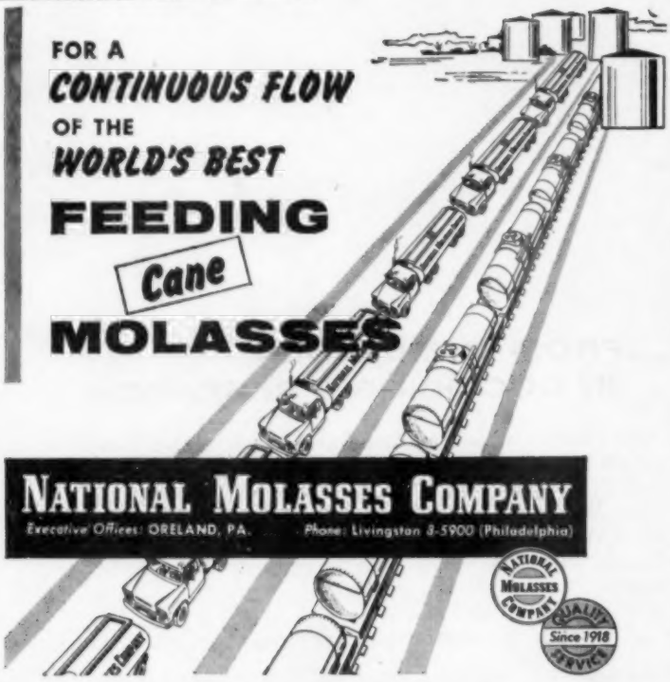

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WASHINGTON—A feed company was getting complaints from farmers who were finding insects in the product.

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Officials from the company brought their problem to the stored products insects laboratory of the Agricultural Marketing Service, U.S. Department of Agriculture, Savannah, Ga.

Here, scientists placed packages of the feed in a room filled with hungry insects. After several days the bags were full of bugs. They had entered via small openings where the bag was stitched.

Because the scientists were able to suggest a new closure method, one proven effective in earlier research, the feed now is moving to farmers in better condition.

This is typical of how AMS scientists, in cooperation with private manufacturers, farm groups and other government agencies, are waging war against the insects that infest food, seed and fiber, USDA said.

TEXAN VISUALIZES 1,000 FEED LOTS

HOUSTON, TEXAS — A Houston rancher and grocer says he is convinced that the Texas Gulf Coast can handle at least 1,000 more feed lots, each requiring one to three or more employees, according to a recent article in the Houston (Texas) Chronicle.

Joe Huffington returned to Houston with this conviction after he and Mrs. Huffington had attended the National Cattle Feeders Assn. convention in Omaha, Neb.

Mr. Huffington says the Gulf Coast needs men willing to make $2,000 to $2,500 every five months feeding cattle based on a profit of $25 per steer fed out for slaughter, and must do at least 95% of the work.

Record Turkey Crop Expected in Canada

HAMILTON, ONTARIO—The stage is set for a new record in turkey production in Canada this year, according to an address given by Prof. J. R. Cavers, head, poultry science department, Ontario Agricultural College, Guelph, Ontario, at the recent Ontario Turkey Assn. convention.

Settings for the first quarter in the heavy type are up 85% over last year and 23% over 1959, the previous record year, according to Canada Department of Agriculture figures.

Prof. Cavers said that by the end of March, last year's total cutback of 1.1 million heavy type poults would have been made up with over a third of a million to spare.

Broiler type settings are running a little under 1959 but well above 1960, he said.

Prof. Cavers said that the second quarter will tell the story. He continued by saying, "If subsequent settings of both heavy and broiler type eggs are held down to 1959 levels, Canada's turkey tonnage in 1961 would exceed that of 1959 by about 9-10%. A somewhat greater increase for the year is anticipated, however, due to last season's buoyant turkey prices combined with an overabundance of breeding stock both in Canada and the U.S."

He said that the increase in heavy type turkeys is general across Canada.

The Prairie provinces and Ontario hatch about 85% of Canada's mature weight turkeys and Ontario and Quebec hatch some 90% of the turkey broilers.

He asked, "How much of the increased turkey hatch (heavy type) to date represents a levelling out of the season and how much a gain for the year?" Then he enlarged on the subject by stating that March, April and May are big months, accounting for 74% of the heavy type poults hatched in 1959 and 78% in 1960. The hatch tends to be more seasonal in a low hatch year and to spread out more in years of heavy production like 1959 and 1961, he said.

50 Years of Service

LANCASTER, PA.—R. Chandler Heagey wound up 50 years of service with John W. Eshelman & Sons recently. Although Mr. Heagey, 67, is in semi-retirement, he says he likes nothing better than wrestling with the everyday problems of his job as assistant secretary and controller.

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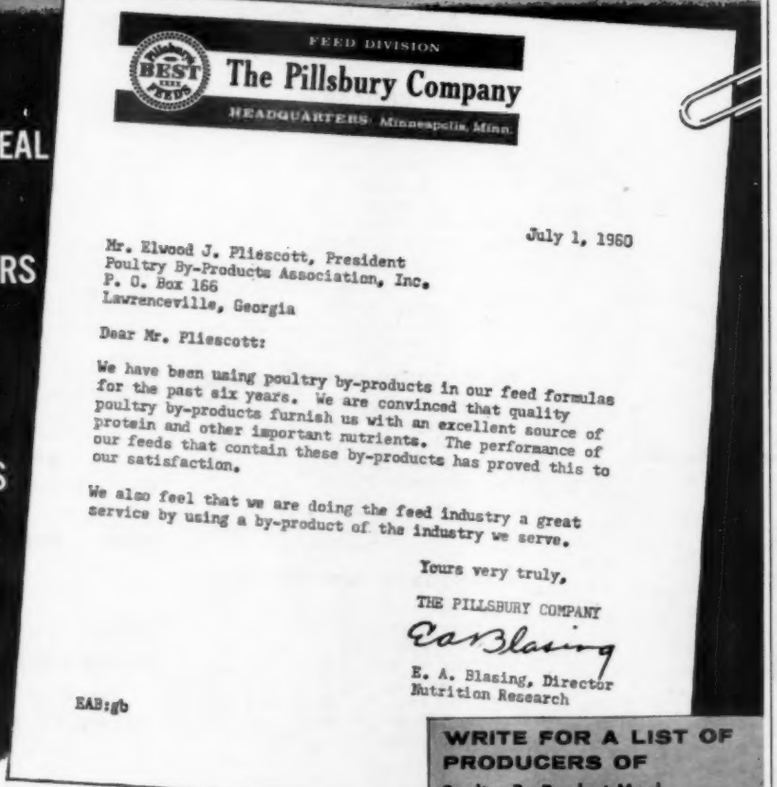

FEED DIVISION
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HEADQUARTERS: Minneapolis, Minn.

July 1, 1960

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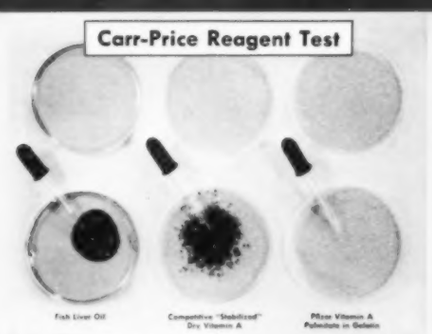
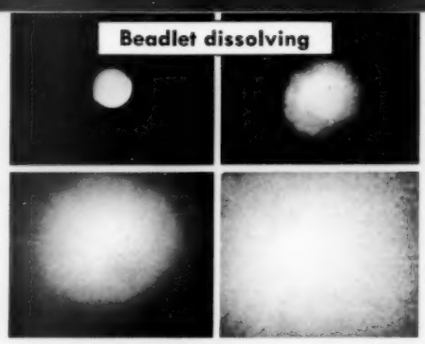
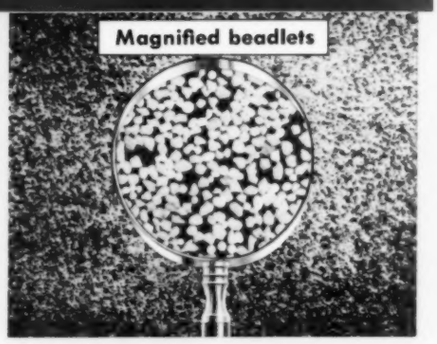


Fish liver oil (above) and many ordinary competitive vitamin A products react strongly . . . means some vitamin A is exposed and unprotected. Pfizer Vitamin A particles are sealed in gelatin to protect potency from oxidation.



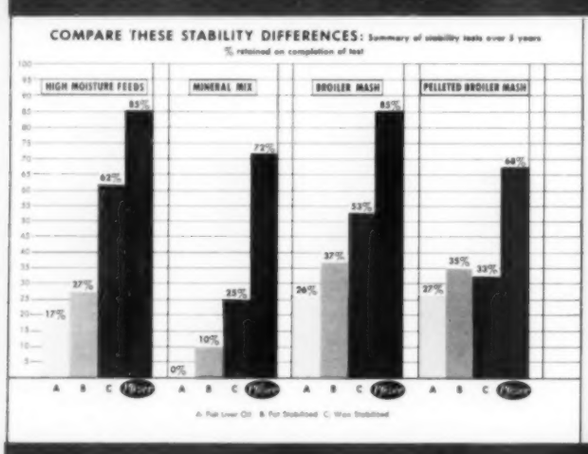
It dissolves completely in digestive fluids at body temperatures to release 100% of the vitamin A for rapid absorption. Other products with waxes may inhibit release. Those with oils are not as efficiently absorbed.



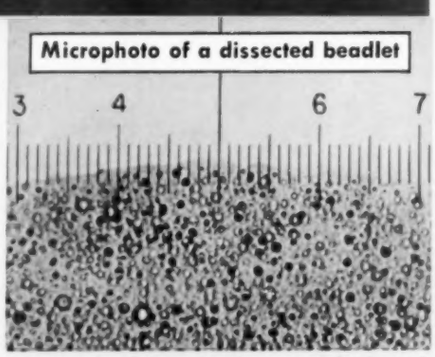
Dry, uniform, free-flowing beadlets aid in thorough distribution. Size and potency have been specially selected to facilitate the best distribution in your feeds . . . especially important with starter and pre-starter feeds.

TEAMED WITH THE HIGHEST-QUALITY CRYSTALLINE A

...unsurpassed stability in all types of feed ...most usable form of vitamin A



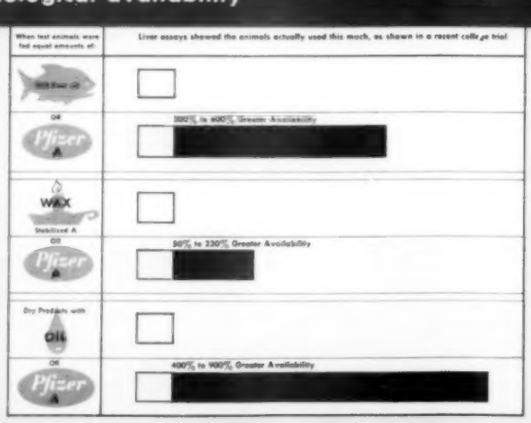
Pfizer Vitamin A retains greater potency in pelleted and high-moisture feeds, concentrates, mineral mixes, supplements, bulk feeds and range cubes. Cuts costly overfortification. Assures you of providing more vitamin A when feed is consumed.

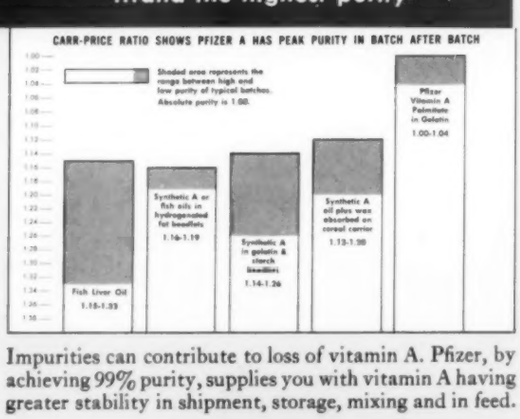


Thousands of tiny vitamin A particles in each gelatin beadlet disperse most rapidly in digestive fluids—are available for absorption at once.

...maximum biological availability ...and the highest purity

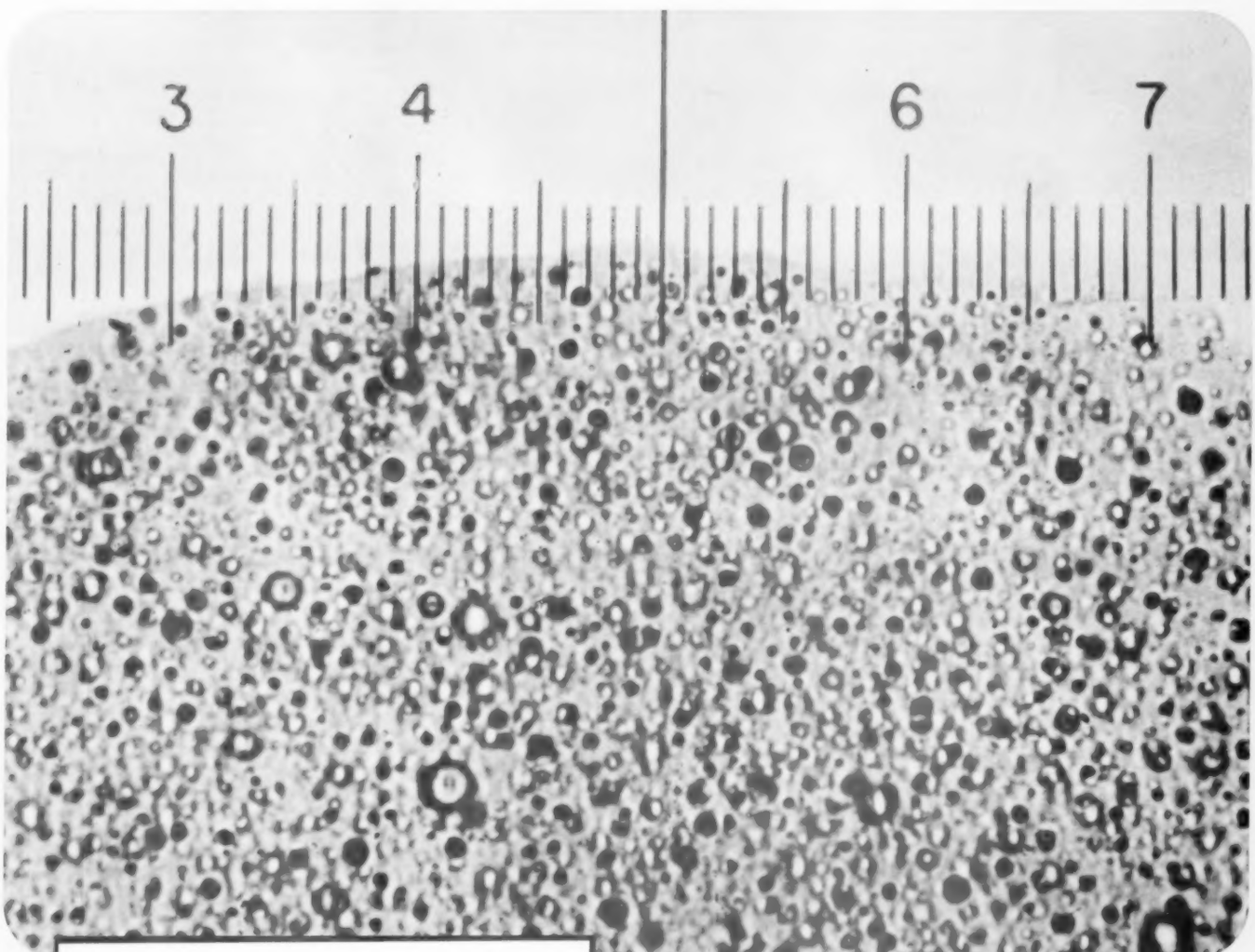
A recent college test shows Pfizer Vitamin A has availability from 300-600% greater than fish liver oils, 50-230% better than ones in wax and up to 900% greater availability than dry products with oil. Liver assay tests are the final proof of vitamin A absorption . . . show how much is assimilated and stored.




CARR-PRICE RATIO SHOWS PFIZER A HAS PEAK PURITY IN BATCH AFTER BATCH
Shaded area represents the range between high and low purity of typical batches. Absolute purity is 1.00.
Fish Liver Oil
1.15-1.33
Synthetic A or fish oils in hydrogenated fat beadlets
1.16-1.19
Synthetic A in gelatin & starch beadlets
1.14-1.26
Synthetic A oil plus was absorbed on cereal carrier
1.13-1.30
Pfizer Vitamin A Palmitate in Gelatin
1.00-1.04

Impurities can contribute to loss of vitamin A. Pfizer, by achieving 99% purity, supplies you with vitamin A having greater stability in shipment, storage, mixing and in feed.

Give You Big Benefits



Just one beadlet contains thousands of vitamin A particles. This portion of one normal-sized vitamin A beadlet is magnified 612 times. The small round particles scattered throughout the cross section are globules of pure Vitamin A Palmitate. And note how the globules are completely surrounded by the protective gelatin matrix. This results in improved stability since none of the A activity is exposed to destructive effects of air, moisture & minerals.

Pfizer Vitamin A particles in each beadlet are so small it would take between 6,000 and 12,000 to stretch an inch . . . so tiny they disperse almost instantly in digestive fluids . . . are made available for absorption immediately.

These many tiny particles are blended throughout the special protective gelatin by a unique patented process—for the best absorption possible by livestock and poultry.

And there are no waxes or oils present in Pfizer Vitamin A to slow down or inhibit absorption. Pfizer A is delivered to livestock and poultry in its most available form . . . the many micron-sized particles embedded in a special protective gelatin matrix.

That's why you can be more confident your feeds are providing the maximum vitamin A activity for the animal when you use Pfizer A.

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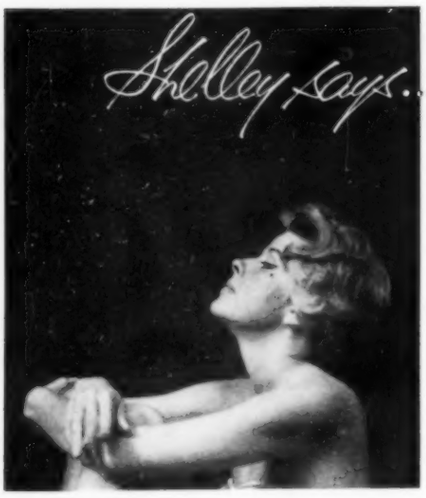

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C. L. Kornegay Joins Arbor Acres Farm

GLASTONBURY, CONN. — Arbor Acres has announced the appointment of C. L. Kornegay as sales and service representative. He will cover the Mississippi and western Tennessee territory and will make his headquarters in Carthage, Miss.

C. L. Kornegay

Mr. Kornegay is a graduate of Auburn University and served for five years as a member of the university staff, first as instructor in school of agriculture and later as superintendent of an experiment station. For the past several years he has represented a feed company in Florida and Alabama.

Good, Bad Points Of Creep Feeding Listed at Event

STILLWATER, OKLA.—To creep or not to creep.

That was the point of decision raised for beef cattlemen by Dr. A. B. Nelson, department of animal husbandry, Oklahoma State University, during the March 10-11 Oklahoma Feed Industry Conference and Workshop here.

Increased weight gains and improved condition are expected whenever suckling calves are allowed access to feed in addition to their mother's milk and pasture forage, but, as it was noted by Dr. Nelson, there is considerable variation in response to creep feeding.

This variation is related to the amount of milk the cow produces and the quantity and quality of pasture, he said.

"If both of these factors (milk supply and forage quantity and quality) can be rated as good, one should expect only a small increase in gain and condition of calves due to creep-feeding," Dr. Nelson said. "However, if one or both of these factors are poor, then the increases in gain and condition will be much greater.

"When calves are creep-fed the owner expects to increase the value of the calf at weaning. Increased value must result from increased weight, increased selling price per 100 lb. or a combination of these two factors.

"Whether or not the increased value of the calf is greater than the increased cost of producing it depends upon conditions on a particular farm or ranch."

Following are the advantages and disadvantages which Dr. Nelson listed for creep feeding:

ADVANTAGES—1. Increased gain, particularly of calves from young or very old cows, poor milk producers or during a drouth season.

2. Improved condition at weaning.

3. Sell more pounds of calf per cow or per acre of grazing land.

4. Can market baby beef at an early age.

5. Can go on feed faster and with less shrink at weaning.

6. Greatly increase selling value as good-choice slaughter calves those cattle that would grade medium or common as feeders.

7. May market "two-way" calves which can be sold for slaughter if feeder prices are relatively low. These calves would be good-choice for slaughter or as feeders.

8. Market for home-grown grain.

9. Keep fall calves thrifty-appearing, gaining and showing more bloom during "hard" winter on dry grass.

DISADVANTAGES — 1. Increased labor and equipment cost.

2. Increased feed cost may be greater than increased value of calf.

3. Slower and less efficient subsequent gain in feedlot or when fed wintering rations.

4. Probably no effect on condition of dam.

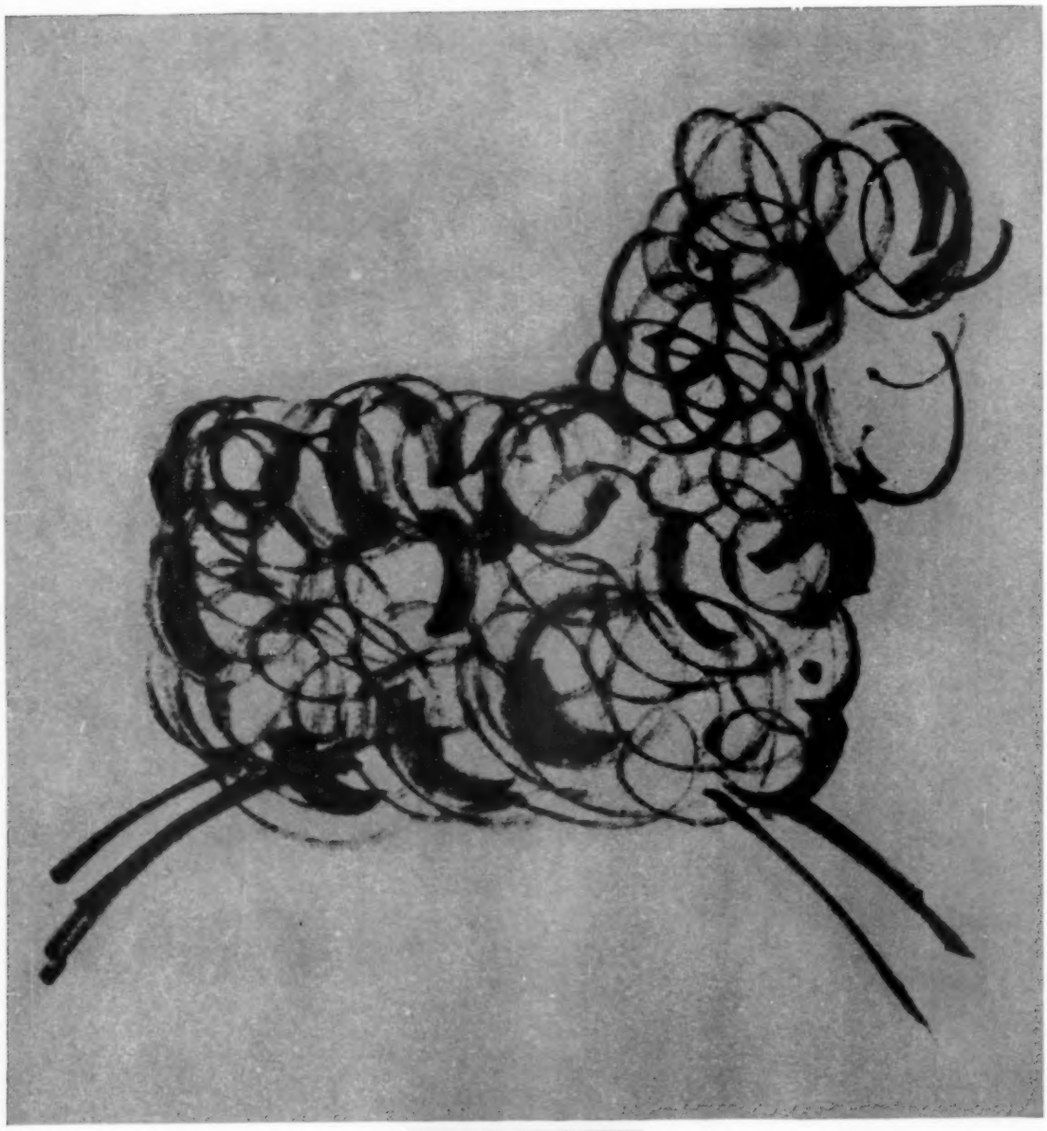
5. Improved condition of heifer calves may be detrimental to their development as replacement females.

6. Heavier and fatter creep-fed calves may sell at a lower price per 100 lb. as feeders.

Egg-Laying Test

MANHATTAN, KANSAS — An egg-laying test to evaluate various strains or breeds of chickens sold to Kansas poultrymen by commercial hatcheries was started by Kansas State University extension poultrymen in cooperation with the Kansas Poultry Assn.

Gayner McDaniel, extension poultryman in charge of the project, said this is the first test of its type in the state. It is a multiple-unit project involving 5,600 birds from seven commercial strains of chickens and a Cornell University control.



NEVER A CHANGE Costly formula changes are never a problem when you use Hooker dicalcium phosphate, since there's never a change in the high quality of the product. You will have no trouble maintaining the nutritional value of your feeds. Phosphorus content is

18.50% min., calcium content ranges from 24.00% min. to 27.00% max., and fluorine content never exceeds 0.05%. You will get optimum feed ratio as well.

When you deal with Hooker, you can depend upon prompt deliveries to fit your production schedules.

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HOOKER CHEMICALS PLASTICS

"Either you get that nearsighted goof off the bag stitcher or we quit!"

Ruminants May Need Added Potassium

COLUMBIA, MO.—Growing ruminants need a ration that supplies more potassium than may be present in some feeds, according to studies at the University of Missouri animal husbandry department.

Dr. William Pfander, animal nutritionist, says that up to now it has been thought that potassium need not be included in mineral supplements. He said that the reasoning was that animals' needs would be met from potassium stored in leaves and stems of forage plants. Such roughages contain 1-3% potassium.

Dr. Pfander points to three trials by a University of Missouri graduate student, M. F. Brink, Golden Eagle, Ill. Those studies, he says, set the need for potassium in the ruminant growing-fattening ration at a level of 0.4 to 0.6%. Swine and poultry need less, they showed.

According to Dr. Pfander, a standard ration of corn, protein supplement and 3 lb. alfalfa hay should meet this requirement. However, a ration based on corn and cob meal may be borderline, he continued. Corn or milo which contains about 0.3% potassium will be deficient in this mineral when fed without roughage unless the protein supplement is a good source of the mineral. Where urea supplies one third of the protein equivalent, says Dr. Pfander, the potassium level in the supplement will be reduced by one third. Soybean meal contains about 1.8% potassium, cottonseed meal 1.2%.

The Missouri animal nutritionist recommends that cattle fed on ground ear corn receive 1-2 lb. hay per day. If not given hay, cattle should be bedded on wheat straw or have access to a mineral mix containing potassium.

He concluded by stating that since swine and poultry need less potassium, grain and supplements will supply their needs.

INCREASE MEAL PRODUCTION

MODESTO, CAL. — The Modesto Tallow Co. here is expanding its production of feather meal and has added four cookers to the plant to handle the increased production, according to Charles L. Tocalino, Jr., company executive. The meal is sold both domestically and in certain areas abroad to feed processors. Mr. Tocalino also announced the acquisition of the Newman Tallow Co., in nearby Newman, where dead animals and falled stock are now being processed to produce animal feedstuffs and other by-products. Al Bohn has been named manager of Newman.

MR. FEED MANUFACTURER:
For ACTION and RESULTS
INVESTIGATE THE
Ultra-Life PROGRAM
EAST ST. LOUIS, ILL.

Richardson Scale Co. Elects Walter Young

NEW YORK — Walter M. Young has been elected a vice president of Richardson Scale Co. He will continue to direct the marketing activities of the company.

Walter Young

Mr. Young has been with Richardson since 1948, when he joined the company's engineering department. Since that time he has held positions in the process control department, mechanical development section, service department, and electrical development department.

In 1953, Mr. Young was named chief electrical engineer, and three years later he became director of sales for Richardson.

MILLERS TO THE TRADE

In the course of more than 60 years of service to formula feed manufacturers, Fruen Milling Company has established a reputation for quality and service at competitive prices.

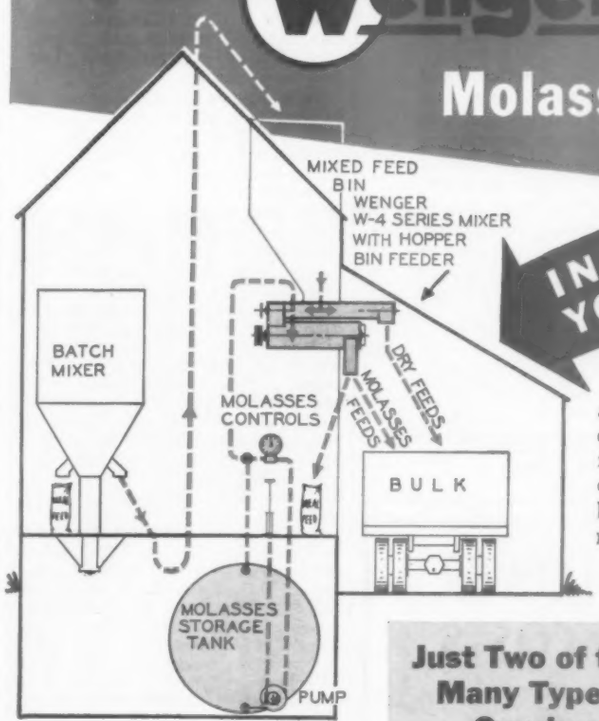
Today, with competition even keener than before, Fruen's experience and know-how can provide feed manufacturers with grain ingredients that maintain profits without sacrificing quality.

Contact your broker or dealer or phone FRanklin 4-2142 or Teletype MP 477

Fruen's

MOLASSES MEAL FEEDS IN BULK WITH Wenger W-4 SERIES Molasses Feed Mixer

INSTALLED OVER YOUR DRIVEWAY



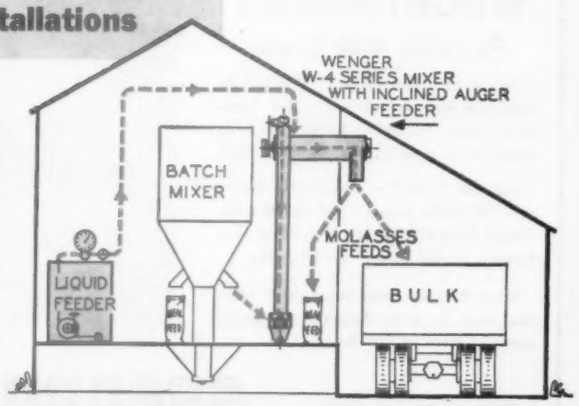
Apply molasses to meal feeds as feeds are loaded into bulk trucks, or convey back inside of feed mill for molasses feeds to be delivered in bags. Application of molasses just as feeds are delivered into bulk trucks eliminates problems of storing molasses feeds in bulk tanks.

Just Two of the Many Types of Overhead Installations

Highest Peak of Efficiency — Greatest Economy — Fastest Rate of Delivery — May be Remotely Controlled

ABOVE: W-4 Series Hopper Bin model available (optional) with reversible feeder, as above. Hence may deliver mixed feeds to the molasses mixer, or into bulk trucks directly for those feeds to be delivered in meal form without molasses. Models available from 3 tons to 40 tons per hour.

RIGHT: W-4 Series Molasses Feed Mixer equipped with an inclined auger feeder, and charged from vertical batch mixers. Eliminates need for an elevator leg. Models available with inclined auger feeders with capacities from 3 to 18 tons make outstanding installation in custom shops.



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Feed Adequate Levels of VITAMIN A

Contact Your Nearest Plant for Prices on

NATIONAL HIGHER QUALITY ALFALFA PELLETS

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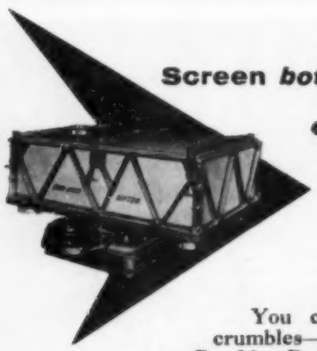

Screen *both* pellets and crumbles on *one* BAR-NUN with no screen changes and *no dusting*

You can screen both pellets and crumbles—without a screen change—on a Bar-Nun Rotary Sifter, at hourly capacities up to 17 tons of completely clean, accurate separations . . . over 20 tons of less complete separations. Bonus Bar-Nun advantages: no dusting; no vibration; less maintenance than required on other screens.

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WEIGHT-A-MINIT
Portable Bulk Scale

No more time-wasting, stop-and-go operation for you when you put Seedburo's new WEIGHT-A-MINIT scale to work on your bulk feed handling jobs.

Just fill it to the weight you desire, wheel it to the hopper, and pull the discharge handle. Your job is finished in a fraction of the time it used to take.

Move it easily where you want it, when you want it, even though it's carrying capacity loads of 800 lbs.

Write us for full details on this new low-cost time and money saver.

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DEALERS' SCHOOL—Clinton, Iowa, was the scene of a recent Pillsbury Co. dealer training school on merchandising methods and feeding programs. Conducting the sessions were F. J. Steinmetz and R. A. Pratt of the feed division training department. Attending the school were, front row, left to right: Clarence Stickney, Louis Schaper, Leslie Green, C. J. King, Kenneth Huizenga, Elmer Kramer, Ron Peterson, Bob Brown, Tom Newkirk. Second row, left to right: Forrest Hollister, Darold Dralle, Gary Isaacson, Louis water, John Wilkie, Skip Gaddy, Bob Pratt. Back row, left to right: Frank Weber, Gary Newman, Edwin Humphrey, Dale Thomas, Raymond Broad-Steinmetz, LeRoy Koch, Paul Detra, Elmer Lancaster, Frank McCoy, William Upchurch, John Knighton, Dick Barrack, Don Thayer. Not shown: Ray Hinrich, Deane Frary, Bob Sheets, Wilbur Conrad.

Indian Group Sees Good Jute Output

CALCUTTA—There are reasonable grounds for expecting a good jute crop this year and if this expectation is fulfilled, the jute industry will have turned the corner in its present difficulties before the end of the year.

So said D. C. B. Pilkington, chairman, Indian Jute Mills Assn., at the annual general meeting of the group held here recently.

India supplies about 86% of the 850 million yards of burlap used in the U.S. each year for bags and jute fabrics for industrial textiles, according to the Burlap Council of the Indian Jute Mills Assn.

The chairman's comment on the outlook followed a detailed review which he gave of the progressive difficulties which the jute industry has faced since the beginning of last year when the prospect of a sub-normal carryover of raw jute from the 1959 crop was followed by a sizeable deficit in the 1960 crop yield as a consequence of a prolonged drouth in the spring of last year. This produced a very tight raw material position which still confronts the mills as they must work on a carryover from last year's crop until the new crop is available in August of this year, he said.

"The sharp advance in the price of raw jute and burlap which this raw material squeeze has sparked since the second quarter of last year," said Mr. Pilkington, "is a matter of grave concern to the industry and to its customers in India and abroad. In January of 1960, raw jute was quoted at 31 rupees per maund as against a recent high of 67 rupees per maund. Burlap in the U.S. market in January of last year was 10¢ a yard for the standard 10 oz. fabric as compared to a recent price of 16¢ per yard."

Mr. Pilkington added that the rise in jute prices which has greatly exceeded the rise in burlap prices is causing heavy losses to the jute industry. "Moreover," he said, "the higher burlap prices are a source of increasing difficulty to our overseas buyers in meeting competition from substitutes. A return to more economic price levels, therefore, is a matter of the gravest urgency."

Price Reversal

The prospect of relief from the raw jute shortage later this year and hence a reversal of the price trend is foreseen by Mr. Pilkington.

Mr. Pilkington stated that plans have now been made and that a buffer stock scheme is ready to be implemented as soon as there is again a surplus of jute.

"With demand in excess of supply," said Mr. Pilkington, "prices are bound to rise, but what the industy has been trying to do is to keep the market within bounds and prevent prices from being pushed higher than the supply position warrants." "Thus," he added, "the industry has endeavoured to meet the problem by sealing 12% of its looms, reducing working hours from 48 to 42½ per week, and instituting a voluntary quota system for the purchase of raw jute by the mills with a voluntary ceiling price which the mills will pay for raw jute." He said that by regulating the output of finished goods, the demand for raw jute can be adjusted, and so long as consumption is kept in line with supplies, the maximum price for the raw material should remain realistic.

LOUISIANA ARTICLES

SHREVEPORT, LA.—The Farmers Seed Co. of Shreveport, Inc., has filed articles of incorporation here to operate a seed, feed and farm equipment business. The application listed 10,000 shares of no par value stock.

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- Linseed Meal
- Bran and Shorts
- Tankage
- Meat Scraps
- Other Feed Ingredients
- Grain—oats, corn, wheat, rye, barley, soybeans

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Freeman to Speak at Animal Health Institute Meeting April 24-26

WASHINGTON—Orville L. Freeman, secretary of agriculture, will be one of the featured speakers at the 21st annual meeting of the Animal Health Institute, Inc., in Washington April 24-26.

Mr. Freeman, whose talk is planned for Wednesday afternoon, April 26, will present a "Discussion of Farm Policy as the Secretary Sees it Today."

To be held in the Mayflower Hotel, the meeting will get underway Monday, April 24, with a board of directors meeting, registration and the annual business meeting.

The Tuesday program will open with a talk by Paul V. Kepner, administrator, Federal Extension Service, Washington, D.C. His talk is entitled "A Discussion of the Place of the County Agent in Today's Agriculture." Following Mr. Kepner's talk, Dr. Daniel G. Aldrich, Jr., vice president of agriculture, University of California, will speak on "The Role of Agricultural Colleges and the Animal Drug Industry."

FDA Speaker

Winton B. Rankin, assistant to commissioner, Food and Drug Administration, will open the Tuesday afternoon program with a discussion on FDA, industry and modern technology, clarifying administrative procedures of FDA and areas of misunderstanding.

The next speaker will be Paul J. Cupp, president of American Stores Co., and chairman of the board of directors of the National Assn. of Food Chains. His talk is entitled "A Discussion of Chemicals in Our Foods and Customer Reaction Thereto."

Drs. Joe M. Bohlen and George M. Beal, professors of rural sociology, department of economics and sociology, Iowa State University, Ames, will open the Wednesday morning program. Their talk is entitled "A Tailor Made Presentation on How Farm People Accept New Ideas and Products."

Mr. Freeman will speak Wednesday afternoon and the program committee is hoping to arrange for a second cabinet member to speak at the event also.

Social activities are planned for all three days. On Monday there will be a ladies' luncheon and fashion show for the wives and an Animal Health Institute reception is planned for the evening. A board of directors luncheon is slated for Tuesday to honor special guests, and the president's reception will be held in the evening.

The Wednesday social schedule includes a special luncheon where distinguished service awards will be presented, and the annual Animal Health Institute banquet will be held Wednesday evening.

Trade-Mark Assigned

JEFFERSONVILLE, IND.—Pollyphos®, registered trade-mark for defluorinated phosphate additive for livestock and poultry feeds, has been assigned to Hooker Chemical Corp. by the U.S. Patent Office under registration No. 701459.

Pollyphos, a part of the company's agricultural chemical line, is manufactured by the phosphorus division of Hooker at its Houston, Texas, plant, the former Butler Chemical Co., acquired by Hooker in 1960.

North Dakota Feed Sales off 5% in '60

BISMARCK, N.D. — Commercial feed sales reported in North Dakota for the year 1960 decreased about 5% from the all time high reached in 1959, according to L. A. Koehler, state food commissioner and chemist.

Mr. Koehler said that complete swine feeds decreased 30% while complete turkey feeds increased to almost three times that of 1959. The volume of feeds in the other classifications remained substantially the same. Poultry feeds constitute 28% of the total volume, swine feeds 27%, and beef and cattle feeds about 29% of the total.

Commercial feed sales in North Dakota for the past six years follow: 1955, 64,672 tons; 1956, 59,790 tons; 1957, 62,046 tons; 1958, 80,395 tons; 1959, 105,415 tons and 1960, 100,133 tons.

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PRODUCT INTRODUCTION—Broiler producers and industry personnel in Mississippi attended the first in a series of Merck & Co. presentations introducing "Amprol" to the producing industry. Held in Jackson, Miss., the first meeting's attendance included the above group. From left to right, they are Dale C. Dean, Merck feed products representative, Birmingham, Ala.; J. R. Tricou, Louisiana Hatcheries, Hammond, La.; L. T. Spence, feed medication products manager for Merck, Rahway, N.J.; Tom Sparks, McCarty Enterprises, Magee, Miss., and James Rushing of Fred L. Gaddis Feed Mills, Forest, Miss.

Delmarva Prediction: 'Mergers Will Come, But They Are Only One Road to Success'

By Special Correspondents

WILMINGTON, DEL.—Delmarva's broiler industry is going to experience some mergers in the future, but mergers are only one way to success, panelists decided at a session of a four-day seminar for poultry executives sponsored in the Hotel Du Pont here by Delmarva Poultry Industry, Inc., Georgetown, Del., in cooperation with the universities of Delaware and Maryland.

Members of the panel, who discussed "Organizational and Financial Structure of the Broiler Industry in the Future," included: Dr. Robert Dince, University of Georgia, Athens; Harold Snyder, Arkansas Valley Industries, Dardanelle, which was formed by a merger of 13 poultry firms about five years ago; Dr. Cliff Carpenter, Laguna Beach, Cal., and William A. Haffert, Jr., Sea Isle City, N. J., editor-publisher of the trade journal, "Broiler Industry."

Dr. Dince discussed ways to obtain more capital by independents in the industry, which he said, consists chiefly of small firms.

"The small firm," he asserted, "has two main advantages: Simplicity of organization and ease and rapidity in making decisions. Most failures are the result of poor planning and organization. Mergers are good, but great care should be taken in effecting them. Expert advice is needed."

Several Paths

Dr. Carpenter said there are several paths to success in the industry. But above all, he stated, those in the industry should realize that "business acumen is more important than agricultural knowledge."

(A detailed account of Dr. Carpenter's remarks appeared on page 69 of Feedstuffs, March 25.)

Mergers can work and work well, declared Mr. Snyder, who described some of the experiences of the merger of 13 independents in Arkansas to form Arkansas Valley Industries about five years ago.

Moderator Haffert expressed confidence in the wisdom of mergers and bigness. Delmarva's poultry industry probably will experience mergers as time goes on, he pointed out. "The large feed producers," he added, "are getting there as are the processors and manufacturers."

Other Discussions

Other sessions included discussions of the following subjects: "Getting the Capital to Meet Your Requirements," with Dr. Dince as speaker; "Business Opportunities in the Sixties," with Lawrence C. Murdock, Federal Reserve Bank of Philadelphia, as speaker, and "Would We Do It Again?," relating to mergers, with Mr. Snyder as speaker.

There has been considerable unionization of poultry workers and "labor is eager to organize more," Patrick B. Comer, Jr., head of Patrick

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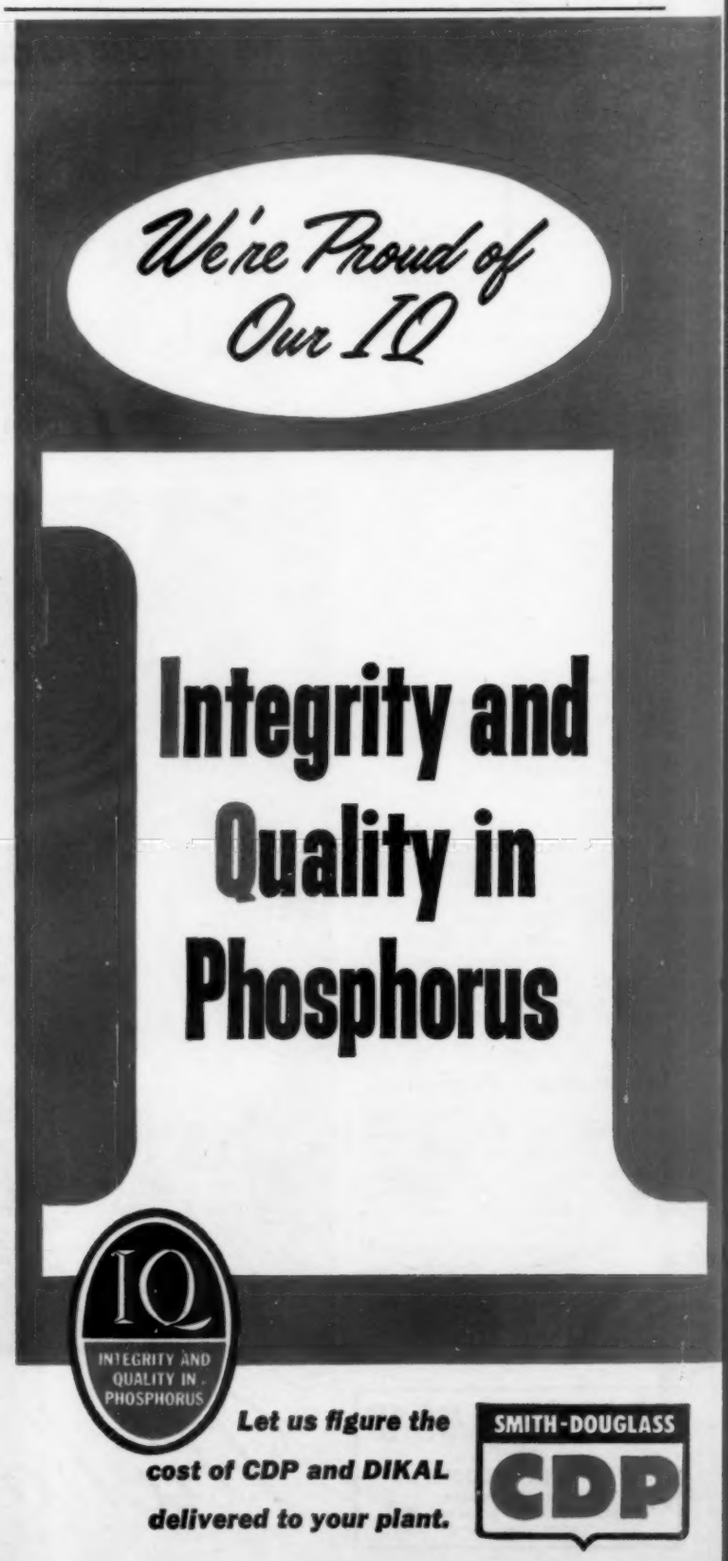
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B. Comer Associates, Greensboro, N.C., said at one of the sessions.

Mr. Comer told the poultry executives that if their businesses are not unionized, and they "face a labor organizing drive," they should retain "a good labor attorney." Mr. Comer said "your corporate attorney should not be used in this situation."

If organization of their plants or other operations including trucking is not desired by management and is to be prevented, Mr. Comer continued, there must be good employee-management relations.

"The only thing a union really has to sell your employees," Mr. Comer added, "is your own mistakes."

In the background of the seminar was concern about increasing competition from other broiler producing areas, mounting costs and the effects of new farm programs being developed in Washington, D.C.

NEPPCO Says Tests Question Claims for Egg Overwrapping

TRENTON, N.J. — Northeastern Poultry Producers Council, Inc., reports that a preview of recent test results casts doubt on the validity of claims made in recent months regarding the extended "shelf life" of eggs wrapped in cellophane.

"While giving no evidence of harmful effects upon egg quality, the cellophane, itself, did little or nothing to prolong or hold quality," reported NEPPCO.

The test did reconfirm, however, that proper temperature and humidity are still the key factors in quality preservation. "And most important of all, you've got to start with a good egg," NEPPCO said.

Cellophane overwrappings were reported to have some advantages over unwrapped cartons. It has considerable consumer appeal, it prevents tampering with the package, and it confines leaky or broken eggs to a single carton, thus minimizing waste. But the added cost must be substantiated upon these merchandising and economic factors, and not on quality preservation, the test indicates, says NEPPCO.

The test was conducted under the direction of Dr. Alfred Van Wagenen, NEPPCO's director of research and development at the New Jersey Poultry & Egg Marketing Assn. in Flemington. Over 5,000 eggs were individually examined in the eight-week test of four types of cellophane. The eggs were sorted into over 100 control lots and subjected to a wide variety of temperatures, humidity and handling conditions.

The report currently being written is entitled "Overwrapping Egg Cartons with Cellophane—Report of a NEPPCO Test of Quality Preservation Under Practical Market Handling Conditions." It will be available to members soon.

A later technical report for the benefit of scientists doing further research is also planned. For this report, the data is being given more detailed biometric and statistical analysis by the electronic data processing center at Rutgers University. This work is under the supervision of Alan Meredith, agricultural economist at Rutgers.

NEW FEED PLANT

SALINA, KANSAS — A new feed and seed plant opened here recently. Owned and operated by Jack Fencl, formerly manager of the Salina Seed Co., the new firm will handle Purina and Naturich feeds as well as a complete line of farm seeds.

Plans for Program At PENB Annual Meeting Announced

CHICAGO — The program for the 21st annual meeting of the Poultry & Egg National Board to be held at the Sheraton Towers Hotel here April 10-12, will be built around the theme "Patterns for Champions."

The program will be aimed at driving to the heart of the poultry industry goal—putting more products on family tables at greater profits, says Ralph J. Thomas, PENB president.

Committee and board of directors meetings will fill the first day of the annual meeting.

The second day's program will include: Dr. Herrell DeGraff, Babcock professor of food economics, Cornell University, speaking on "Attitudes Build Sales," and Dr. Don Paarlberg, professor of agricultural economics, Purdue University and former economic adviser to President Dwight D. Eisenhower, speaking on "Hurdles to Cross."

The final day's program will include a panel discussion on "A Giant to Be Harnessed," giving professional "tips to sales success" in the egg, turkey, broiler and duck industries. Moderator will be Dr. George F. Godfrey, vice president, Honegger Farms, Forrest, Ill. Panel members will include: Dean Jones, Chicago, account executive — marketing, J. Walter Thompson Co., and Augie R. Ring, Jr., director, department of retailer relations, American Meat Institute, Chicago.

Closing the three day meeting will be a talk on "How Concerted Marketing Efforts Can Reverse Sales" by David K. Hardin, executive vice president, Market Facts, Inc., Chicago.

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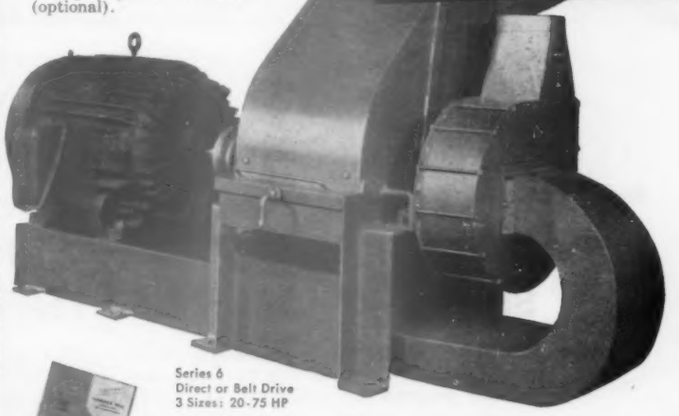

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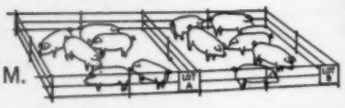


Effect of Dietary Fat Levels Upon Reproductive Performance of Mink

● H. F. Travis and P. J. Schaible, Michigan State University Quarterly Bulletin, Vol. 43, No. 3, pp. 518-521, February, 1961.

ABSTRACT AND COMMENT

Much discussion can be had at any gathering of fur farm ranchers regarding the levels of fats which can be added to mink diets. Most operators strongly believe that minks must have rather low levels of fats in their diets to obtain optimum performance. Probably part of the current belief is because of the research at Wisconsin showing a relationship between "wet belly disease" and fat levels in the diet (Leoschke and Elvehjem, 1958, 1959, 1960).

"Wet belly disease" accounts for thousands of dollars of loss annually to the mink industry and is characterized by an accumulation of urine in the fur usually adjacent to the male urinary orifice. It occurs in the fall, and results in permanent damage to the pelt.

The Wisconsin group showed that the incidence of this disease in mink on a ranch diet containing 12.5% fat was 19%, while on a similar diet containing 25% fat, it was 40%. Two hypotheses as to the correlation between level of fat in the diet and the incidence of "wet belly disease" have been proposed by this group as follows: (1) Fat contains a factor which is the causative agent; and (2) fat, per se, may not be the causative agent, but, a high caloric intake caused by the fat's presence in the diet will cause a reduced intake of certain required nutrients. One of the experiments conducted by the Wisconsin researchers indicated that a reduction of fat content of diets helped reduce the condition. Also, choline may be a factor, and the recommendation was made to reduce the fat level of mink diets, on a dehydrated basis, for early growth, to approximately 20%. Feeds with a low fat content such as horsemeat, lean rabbit and cottage cheese were suggested as suitable ingredients as part of the ration.

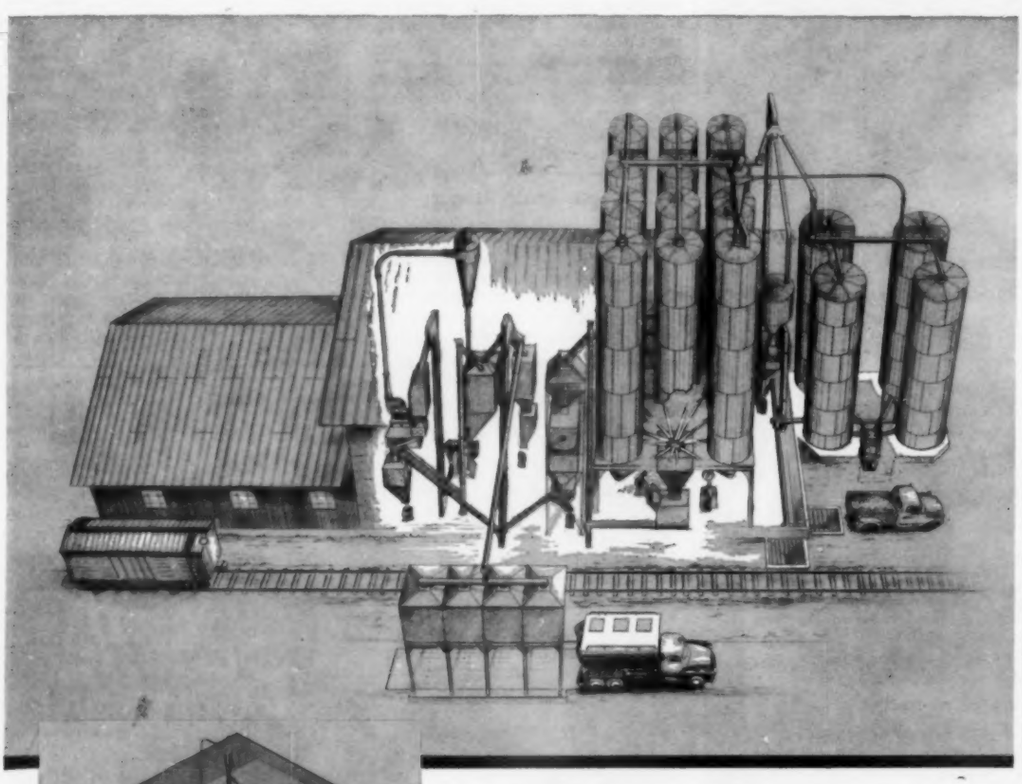
More recent work by the same stations has suggested that it may be possible to breed mink to resist the wet belly disease. Certain color phases of mink—sapphires, whites and pastels in particular—are especially susceptible to the trouble. Also, kits from certain litters seem more resistant than others, regardless of their color phase. This suggests that there may be a distinct possibility for improved selection practices to avoid the condition.

Leoschke also believes that the chemical and physical properties of the mink urine may be different in the case of those affected with "wet belly." He has found that the affected mink had a lower surface tension of urine than normal. This would increase the tendency for the urine to soak into the fur and to stick. Possibly, abnormal fat metabolism may be responsible for the reduction in the surface tension.

However, the Wisconsin group has reported also that boosted caloric content of rations for mink can result in quality pelts. Levels of 4% and 6% added fat in place of the same amount of horsemeat in a ration comprised of 40% horsemeat, 30% ocean whiting, 10% liver and 20% mink cereal mix resulted in improved performance and slightly lower feed consumption. However, in these trials, when 8% added fat was used, it was too much. In metabolism work, these investigators also showed that mink can digest fat (fish oil, lard or tallow) quite efficiently.

The Michigan group has felt that little information has been secured in the past, on a controlled experimental basis, regarding fat additions to mink diets. A relatively low fat control ration was used which contained 26⅔% each of horsemeat and bone, tripe and ocean perch, 15% cereal supplement and 5% fresh liver. The control ration, during both years, contained about 23% of fat, on a moisture free basis (SHM—Note that this is above the 20% fat level recommended by the Wisconsin group for prevention of "wet belly.") The addition of fat produced diets 8% higher in fat than the control ration during the first year's trial and 12 and 21% higher in the second year's experiment. In the first year, the breeding females were kept in slender breeding condition, while in the second year, an attempt was made to only maintain their weight.

The results showed that it was difficult to maintain the body weight on the breeding females on the highest fat level (44% moisture free basis). Mating performance of the males was comparable irrespective of fat level, although they were all given approximately equal opportunity for mating. During the first year, the mating performance of adult and kit males was satisfactory and unrelated to fat levels. In the last year, the



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young males on the 35% ration did not perform very well, but since the kit males on the 44% diet mated well, performance was probably unrelated to fat content of diet.

Analysis of variance showed that there were no significant differences among mink on the different fat levels with respect to the number of females breeding and whelping, or in the number of kits born or alive at the end of the experiment. Although the one-day-old kits were significantly smaller from mothers on the 31% fat level in the first year than those on the control ration, there was no such significant difference at 1, 14 or 21 days in the second trial.

The fact that reproductive performance was good with the high fat ration certainly indicates that most typical ranch rations have an excess of other nutrients. For example, those mink on the 44% fat ration ate 21% less food than the controls and those on the 35% level ate 13% less during the second year's trials. Actually, this difference was probably greater since those mink on the control diet lost some weight while those on the highest fat level gained slightly. The 44% fat diet contained over 67% of its calories in the form of fat.

Although this study only reports the growth of the kits to 21 days of age, their health was apparently fully as good as those on the low level of fat as revealed by the mortality figures. It should be pointed out that dark minks were used in this study. It would be interesting to have the Michigan workers continue their work with high fat diets with those strains particularly susceptible to high incidence of "wet belly," and over a longer growth period for the kits. Obviously, we still have much to learn regarding both fat levels in mink diets, and the incidence of "wet belly" as affected by the fat level.

Group Requests More Transportation Study

WASHINGTON — Expanded study of the effects of exempting from interstate commerce regulations certain motor carriers that transport agricultural commodities has been requested by the U.S. Department of Agriculture's transportation research advisory committee.

Among aims of the research would be to determine which commodities are carried by interstate common and contract carriers, precise information on rates, and new knowledge of traffic flow and other conditions affecting public service, the USDA committee said.

Development and use of coordinated transportation facilities is also a high priority research need, according to the committee. The relatively recent development of such freight carrying systems as rail piggyback, trailership and container devices adapted to several methods of transportation give promise of improved service and reduced farm marketing costs.

Among the specific research needs which the committee believes to be of high priority are: (1) Development of improved efficiency in loading and unloading trucks, trailers and rail cars; (2) basic and applied studies to improve protection of food products against insect damage during transit, and (3) improved protective services and equipment for maintaining product quality in transit.

James E. Davis, manager of the Seaford, Del., poultry feed processing mill of General Mills, Inc., is a member of the committee.

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Plant Building Burned

DES MOINES—The main building of the Des Moines Oats Products Co. plant here was destroyed by fire March 21. The loss was estimated at between $50,000 and $100,000. No one was injured.

George Simpson, manager of the firm, a subsidiary of the Blatchford Calf Meal Co., Waukegan, Ill., said the two-story building used for manufacturing and storing livestock feed was insured.

NEW IOWA FEED STORE

ROLAND, IOWA—Opening of a new feed and supply store here was observed with open house. Howard Bergeson of Radcliffe is manager of the store, and William Buck is production and research manager. The business, originally a one-man operation of the Ames In-Cross hatchery here, now is expanded to an operating force of 55. The feed will be mixed from six bulk bins and loaded directly into a truck for delivery.

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Idah-Best Sales for 1960 Near $2 Million

TWIN FALLS, IDAHO — Gross sales of Idah-Best, Inc., formerly known as the Idaho Egg Producers Assn., for 1960 were approximately $2 million, according to D. C. Jones, general manager.

Mr. Jones said that 75% of this volume was accounted for by sales of feed. Because sales of feeds for all classes of livestock now account for a major portion of all sales, the group voted at its recent annual meeting to change its name from Idaho Egg Producers to the new name, "Idah-Best, Inc."

The firm recently completed a building and modernization program that cost nearly $500,000. This program included a new mill at Idaho Falls and modern facilities at Twin Falls and Caldwell.

Program for Food, Drug Officials Told

WASHINGTON — Heading up the program for the 65th annual national conference of the Association of Food and Drug Officials of the United States will be George P. Larrick, Food and Drug Administration commissioner, and Dr. Arnold J. Lehman, director of FDA's division of pharmacology.

The conference is to be held June 18-23 at Hotel Mayflower here.

Evan Wright, Kansas State Board of Health and president of the association, announced that other speakers would include: Leo Spath, Louisiana State Department of Health; Lawrence S. Martin, secretary-manager, National Association of Frozen Food Packers, Inc.; Dr. Elmer Vliet, Abbott Laboratories; Arthur Nolan, vice president, Dixie Cup Co., and Abraham Abrahamson, New York City Health Department.

Mr. Wright said that topics to be discussed would include quality control of drugs, food and public health relationships, technical papers of significance to food and drug officials and other subjects of importance to all the association members.

The Association of Food and Drug Officials is the professional society of food and drug enforcement officers in all levels of government—federal, state and municipal.

FDA Rules Against 6 Stilbestrol Products

WASHINGTON—A tentative order preventing three drug firms from resuming production of six stilbestrol poultry products has been issued by the Food and Drug Administration, it was reported here.

Leonard Hardy, FDA hearing examiner, urged George Larrick, FDA commissioner, to carry out the proposed revocation. However, Mr. Hardy recommended that the NDA's of two other products examined at the hearing be allowed to remain active.

Mr. Hardy said FDA had established that the six products used for caponettes are "unsafe for use." These products and their manufacturers are: Three different Tend-A-Wate products, Mattox Moore, Indianapolis, Ind.; Tenderettes and Caponade, Vineland Poultry Laboratories, Vineland, N.J., and Stilboserts, George N. Bell Mfg. Chemists, Indianapolis.

The two products which Mr. Hardy said FDA had not proved "unsafe" are used for treatment of broody hens: No-Brood, produced by Mattox Moore, and Anti-Brood, made by Vineland Poultry Laboratories.

It was explained here that in December of 1959 when FDA reversed its approval of stilbestrol implants for poultry, the three firms requested a private hearing and at the same time voluntarily withdrew the products in question from the market and suspended their production. But, unlike a number of other firms manufacturing stilbestrol products for poultry, the three firms mentioned in the recent FDA order challenged FDA to prove that their products were not safe.

Mr. Hardy ruled that the two products used in the treatment of broody hens did not produce unsafe residue in eggs. He explained that the two products are used only for broody hens in flocks maintained for chick production. The eggs are not used for human consumption, and if the hens are used for food use, they are marketed three to six weeks after the end of stilbestrol treatment.

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FEED CONTROL COMMENT

By BRUCE POUNDSTONE
Secretary, Association of American Feed Control Officials
Kentucky Agricultural Experiment Station, Lexington

Acceptance of Feed Guarantees

A feed official's acceptance of a registration does not carry with it approval or endorsement of the product. It means the official finds the product is in order as described. The name is exact and clear. It does not appear to be misleading. The chemical guarantee is in order. The ingredients are properly declared and acceptable. Nothing deleterious is indicated. When amounts or levels are called for, those shown are in line with acceptable practice. If additional statements are required, such as directions for use, warnings and withdrawal precautions, these are proper.

Generally speaking, feed officials are not nutritionists. Most have had little or no training in this field. Even if they were so trained, it would be unwise to expect a judgment from them as to the efficacy of a given product based upon the information they review in accepting a registration.

All too often, however, a company will suggest a statement of endorsement on the part of some control agency or FDA as a part of its label. Such proposals are quickly rejected. Even if such a statement was properly worded, it could only indicate the registration or application requirements had been met. The fact is, offering a product on the market carries silent testimony that the labeling has been cleared in states where pre-sale review is required. This would include all states except three. California does not require registration. Alaska and Nevada have no feed laws.

Acceptance of a registration does, however, place certain responsibilities on the control official to make certain that the feed conforms to the declared proposed use. One would not expect a manufacturer to propose a feed that contained half or twice the protein, for example, usually present for the specified use. (This does happen, however.) All such check-points are useful in the cursory evaluation of registration information by control officials.

Sample Reports

All of this comes to mind over the matter of maintaining declarations on the label. As far as the public is concerned, their expression becomes the specifications of a feed. These are drawn up by the manufacturer. The job of the control official is to see that these are met. As control officials we are not to judge whether the absence of a specified ingredient and substitution of another increases or decreases quality.

Just as acceptance of a feed registration does not give endorsement, neither should reports of analysis showing some variations from the guarantee, chemical or ingredient be accepted as condemning the feed. In these cases the report becomes a statement of fact. It simply says "this is found in relation to the guarantee." The quality of the feed may have been decreased. Some such reports might conceivably indicate an improvement over what was guaranteed.

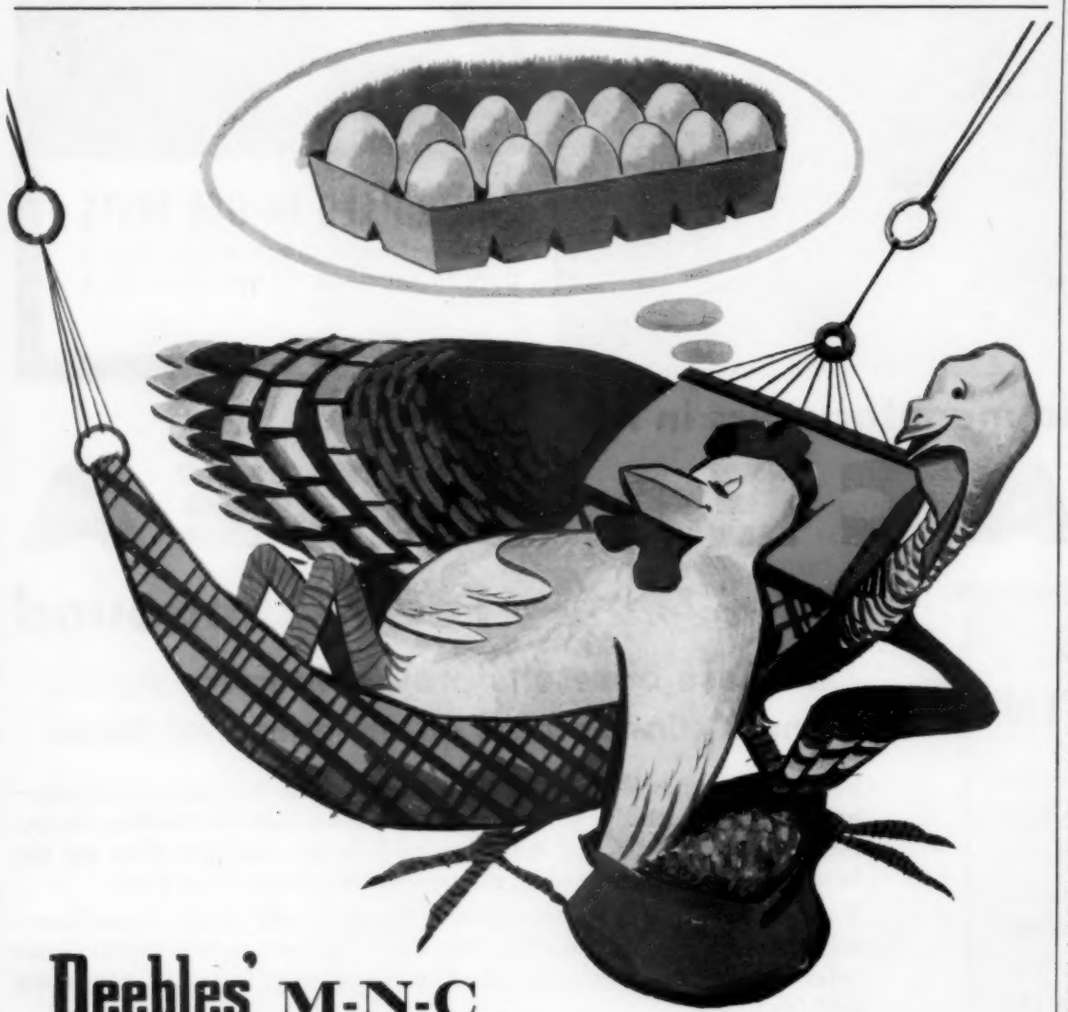
Having made a declaration as to "specifications," a company accepts whatever the reader of the label may interpret from such a factual statement. In the same way, the manufacturer must accept the same factual statement of the laboratory analysis of his product.

Turkey Growers Plan Marketing Cooperative

INGERSOLL, ONT. — Plans for a cooperative marketing scheme for Ontario turkey growers are now well under way. A site for a proposed processing plant has been inspected and approved.

All of this was accomplished when a group of turkey growers, representative of most of the turkey areas in central and western Ontario, held a meeting in Ingersoll. After a discussion of the proposed project and a visit to the suggested site for the plant, the meeting authorized the provisional directors to make application to the Ontario government for a charter incorporating a cooperative company whose head office will be located in Ingersoll.

This provincial plan had its start in the cooperative sales experience of a group of larger producers in the southwestern counties. At the Ingersoll meeting, these growers were on hand to discuss the wider scheme, and in addition, there were two representatives there from the Central Turkey Cooperative at Ellsworth, Iowa, Emery Tegland and Merlyn Ostebee, who told the story of their cooperative.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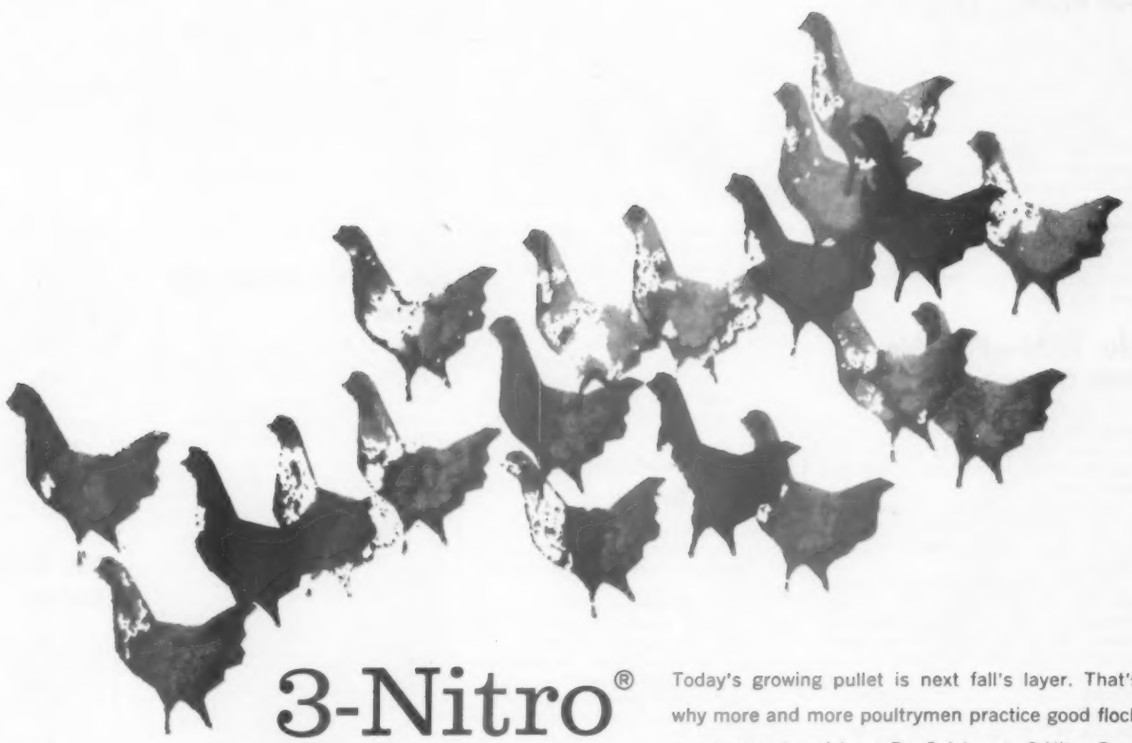

3-Nitro® helps your feed build stronger pullets, better layers

Today's growing pullet is next fall's layer. That's why more and more poultrymen practice good flock management and have Dr. Salsbury's 3-Nitro Powder mixed in the growing mash for their birds. They want stronger, healthier pullets at housing time this fall. And they've learned that 3-Nitro helps growing birds mature more uniformly, start paying a profit sooner. Pullets with 3-Nitro in their feed have extra pep, too. They grow vigorous and strong, have more disease resistance, do better all around. Finally, tests show that laying flocks on 3-Nitro lay eggs on less feed—¼ lb. less feed per dozen eggs! All these flock benefits reflect credit on your feed—with 3-Nitro in it.

3-Nitro is widely advertised

Because of sustained advertising and promotion, your customers know of 3-Nitro's many advantages. Or, they've heard about it from their neighbor. So make sure your feeds provide 3-Nitro's many benefits. Write, wire, or phone for Feed Manufacturers Guide. If you wish, ask for a Dr. Salsbury's representative to call personally and talk with you about 3-Nitro, the feed additive that helps your feed build stronger pullets and better layers.

3-Nitro—another fine additive from . . . Dr. SALSBURY'S LABORATORIES Charles City Iowa, U.S.A.

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DESCRIPTIONS OF NEW AND IMPROVED PRODUCTS AND SERVICES PROVIDED BY MANUFACTURERS AND SUPPLIERS ARE PRESENTED IN BRIEF FORM. FOR ADDITIONAL INFORMATION, PLEASE USE THE ACCOMPANYING COUPON.

No. 7373—Equipment For Poultry, Livestock

A new 44-page poultry and livestock equipment catalog is now available from the Fulton Co. The new book includes the entire line of Fulton equipment.

Featured products are the firm's selection of cooling and ventilating fans, the Ful-O-Matic laying house and the new Fulton Ful-O-Matic steel span building. Over 300 individual product listings and 249 illustrations are included in the book, according to the company. For a copy of this catalog, check No. 7373 on the coupon and mail.

No. 7374—Portable Belt Conveyor

A portable belt conveyor with a hydraulically-powered raising frame has been announced by Finco, Inc., manufacturer of materials handling equipment.

The hydraulic lifting action, with a total stroke of 17½ ft., "permits rapid height adjustment, one-man operation."

The new conveyor features a standard 18 in. wide belt with a self-troughing action accomplished by means of a 14 gauge sheet metal troughing pan. The conveyor is manufactured with a variety of belt widths.

Available in 20-50 ft. length frames in 5 ft. increments, the Finco portable unit has a capacity of 50

tons per hour at a belt speed of 150 ft. per minute carrying a commodity with a density of 100 lb. per cu. ft.

Motive power is supplied by gasoline engine or electric motor.

In-take and discharge hoppers are optional and available in a variety of custom designs. Four-wheel dolly with towing hitch is also optional.

For additional information, check No. 7374 on the coupon and mail.

No. 7378—Equipment Leasing Study

The fourth edition of its study on equipment leasing has been issued by the Foundation for Management Research.

Revised and expanded to 24 pages, the study is entitled: "The Pros and Cons of Equipment Leasing for Smaller Manufacturers, Department Stores and Supermarkets."

A new section advises business executives on renewals and options-to-buy at the end of the lease period, and examines the latest Internal Revenue Service rulings with regard to write-offs of payments on leased equipment.

Included in the study are new tables and charts analyzing the comparative costs of leasing, outright cash purchase, purchase by conditional sales contract, and purchase through bank financing. Charts analyzing cash flow are also included. Specific situations where it is advantageous and disadvantageous to lease equipment are analyzed.

For a copy of this study, check No. 7378 on the coupon and mail.

No. 7375—Adjustable Elbow

A three-section adjustable elbow with special clamp band connection has been introduced into the line of Kleen Grain elevator equipment manufactured by Huss & Schlieper.

This new elbow "can be easily in-

stalled and adjusted to any angle by merely loosening the two bolts at each side of the two-section clamp band." No welding is necessary.

With this type of connection, plus Huss & Schlieper's new automatic butt-welding process, it is said that the new Kleen Grain elbow has a smoother interior surface. This allows a better flow of materials and provides longer wear at critical points.

The three-section elbow is available in 6, 8, 10 and 12 in. diameters. For additional information, check No. 7375 on the coupon and mail.

No. 7384—Poultry Medication

The Merck Chemical division of Merck & Co., Inc., announces development of a "more concentrated formula for FloxAid, a combination of antibiotics and vitamins that provides protection against disease, maintains growth and development, during times that birds are eating less feed.

The new formula is described as offering increased solubility that will permit the use of FloxAid in standard water proportioners.

The company says that "poultry growers now have a product that can be used in standard automatic water proportioners which medicate 1 oz. of concentrate per gallon of water."

Reported advantages of the new formula for FloxAid include: "A more concentrated formula; a new carrier that employs sucrose, affording a soluble base; penicillin in two forms to provide maximum solubility and effectiveness; a convenient package

—5½ oz. plastic bag—designed to conveniently medicate 50 gal. of water at the higher recommended dosage level; at a higher recommended use level, the antibiotic content of new-formula FloxAid corresponds approximately to 51 gm. of procaine penicillin plus 153 gm. of streptomycin per ton of feed; a higher source of vitamin K at use level, and a higher content of antibiotics at use level."

The new formulation is said to provide "a quick method to help birds off to a fast, healthy start; to help maintain normal growth and production when birds go off feed; to help stimuate feed intake and maintain weight gains through disease reduction, and during periods of stress, such as vaccinations, disease attacks, extreme weather change, crowding, pelleting, moving and debeaking."

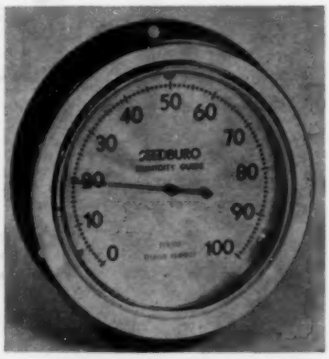
FloxAid, in its new form, will be available to distributors in 5-lb. drums containing 15 5½ oz. plastic bags, and in 25-lb. drums containing 75 plastic bags of the 5½ oz. size.

For additional information, check No. 7384 on the coupon and mail.

No. 7376—Humidity Guide

A new direct-reading humidity guide has been marketed by Seedburo Equipment Co. The instrument is completely self-contained and is "ideally suited for indicating relative humidity where humidity is important in processing."

Because it is self-contained and does not require a wet and dry bulb, the mechanism is reported to be simple and rugged. The unit is suitable for inside or outside operation under



prevailing weather and temperature conditions throughout the U.S.

Black etched markings and numerals on a 4¼ in. aluminum dial are easily read. The dial is graduated in relative humidity from 0 to 100% in 1% increments over a 270° arc.

For additional information, check No. 7376 on the coupon and mail.

No. 7380—Bulk Feed Body

Announcement of the availability of its paddle conveyor mechanical unit in a new elliptical body shape, has been made by FMC Bulk Transport Systems. The unit, Model TGM, is of riveted aluminum construction and is reported to be the latest style of the country's first commercially built bulk feed body.

This design "gives 12% greater volumetric capacity, permitting the

Send me information on the items marked:

- ☐ No. 7373—Poultry Equipment
- ☐ No. 7374—Portable Belt Conveyor
- ☐ No. 7375—Adjustable Elbow
- ☐ No. 7376—Humidity Guide
- ☐ No. 7377—Bale Shredder
- ☐ No. 7378—Leasing Study
- ☐ No. 7379—Weigh Hopper
- ☐ No. 7380—Bulk Feed Body
- ☐ No. 7381—Bag Top Printer
- ☐ No. 7382—Bloat Treatment
- ☐ No. 7383—Vibratory Feeder
- ☐ No. 7384—Poultry Medication

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use of a shorter unit at lower cost for a given payload. Further savings for the feed man are realized through the purchase of a shorter wheelbase chassis, which also enables greater maneuverability." Full length sack decks will carry up to a ton of sacked material.

FMC's all-mechanical paddle conveyor "handles pellets with virtually no damage while consistently unloading at speeds up to a ton a minute," the firm says. "A slip clutch provides overload protection of the all-mechanical drive system."

For additional information, check No. 7380 on the coupon and mail.

No. 7379—Weigh Hopper For Vertical Mixers

Sprout, Waldron & Co., Inc., has announced the availability of an advance specification sheet giving details on a weigh hopper and scale unit for use with vertical feed mixers to provide an accurate batching system for custom mixing.

For a copy of this sheet that is entitled "Advance Specification Sheet No. 206," check No. 7379 on the coupon and mail.

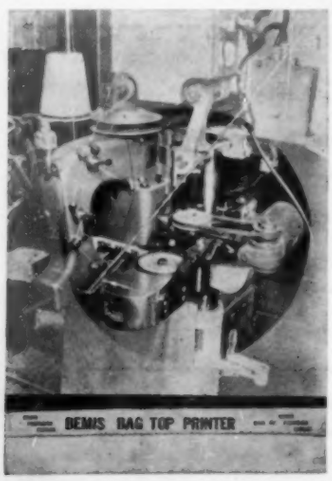
No. 7381—Bag Top Printer

Development of an automatic bag printer "that assures clear, uniform printing of product specifications or codes above the sewing line of sewn multiwall paper bags" has been announced by the Bemis Bro. Bag Co.

The new Bemis Bag Top Printer, as it is called, is mounted on a sewing pedestal and imprints the bag as it is being sewn closed. The new unit utilizes a Porelon ink roll which eliminates the use of fluid inks, solvents, reservoirs, transfer rolls, etc.

Reported to be simple to set up and easy to maintain, the Bemis Bag Top Printer is power-driven to assure clear printing. Type, on the rotary print wheel, can be quickly changed. If, on certain products, printing is not desired, the complete printer pivots on the pedestal column to swing clear of the packing line.

The printing speed is set up by a variable speed sheave on the motor which is synchronized with the speed of the conveyor and sewing head.



This positive control, together with a shelf-indexing type print wheel, "assures printing in the same location on each bag."

In operation, the attendant simply leads the edge of the bag into the printing guide. From this point, the bag is coded and an actuator starts the sewing head to sew the bag. The thread is automatically cut when the bag leaves the sewing head.

The Bemis Bag Top Printer "is designed to give maximum efficiency of operation when used in conjunction with a Bemis sewing pedestal; however, it is possible to adapt the printer to certain other type pedestals."

The company reports that an additional advantage, particularly for a product such as seed, enables coding and dating at the exact time of packing. The Porelon ink rolls are available in black, red, green and violet colors for quick identification in storage or shipping.

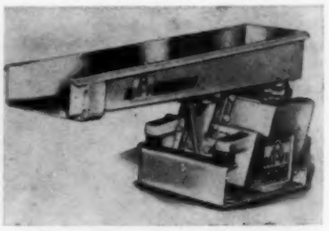
It is said that Porelon, a microporous plastic, insures a uniformity of impression with inks that cannot leak, evaporate or fade. The printing head comes in direct contact with the Porelon cylinder, picking up the surface ink. As it is used, capillary action brings more ink to the surface of the cylinder. If empty, it can be replaced in less than 15 seconds.

For aditional information on this product, check No. 7381 on the coupon and mail.

No. 7383—Vibratory Feeder

Development of a high speed vibratory feeder, that is reported to be exceptionally fast and accurate for feeding of light materials, has been announced by Eriez Manufacturing Co.

The new Model HS-20—"working at speeds up to 60% faster than standard models—features adjustable, uniform rates of feeding and a specially designed high damping spring system." The HS-20 is said to



provide economical, efficient packaging, weighing, batching and bagging operations.

A variety of lightweight, bulky materials may be moved at speeds up to 60 ft. per minute by the AC-operated feeder. Rate of feeding, spreading, agitating or heating can be "precisely adjusted with the variable auto-transformer type controller."

It is said that the light-weight, quiet-running unit can be installed in a minimum of space in conjunction with other equipment. Drive elements of the feeder are fully enclosed for protection against moisture and for-

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And promotions to match! As a Dow dealer, you'll get the most complete merchandising promotion ever put together by one company to sell farm chemicals! See the details below . . . fill in the coupon . . . mail it . . . and get ready to cash in on the warm weather profits!

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When used as directed on label and in accordance with good practices, they comply with Food and Drug Law and other Federal Laws.

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eign materials. For additional information, check No. 7383 on the coupon and mail.

No. 7382—Bloat Control Treatment

The availability of two new soya bean emulsions for control of bloat in cattle has been announced by Dr. Roberts Laboratories and Nicholas of America Ltd.

The two emulsions, called Bloatemul and Emulsifol, "will be marketed in ready-to-use drenching bottles, eliminating the need to make up a drench in those vital few minutes between when the bloated animal is first noticed and when it is treated."

Dr. Roberts Laboratories will produce Bloatemul which will be available from all retailers of animal health products. Emulsifol will be marketed by Nicholas of America, Ltd., and will be available through veterinarians only.

They say that "experiments at the Iowa experiment station showed that an emulsion of soya bean oil was more effective and more rapid in relieving bloat than any unemulsified oil or silicone type product. In most cases animals were completely deflated and resumed grazing in 15-40 minutes after treatment."

For additional information, check No. 7382 on the coupon and mail.

No. 7377—Bale Shredder

Announcement of a two bale wide bale shredder has been made by the Jacobson Machine Works, Inc. Designed to handle two bales side by side, the shredder is 36 in. wide.

This arrangement "not only gives high capacity, but also does a blending job while grinding." The bale shredder is powered by a 20 h.p. motor and is equipped with a variable speed feed table drive.

To assure maximum production, an electric overload trip relay is used

to control the shredder feed table drive. It maintains a full load on the hammermill, stopping the feeder in event of a temporary overload, and starting it immediately as the overload is cleared.

The installation pictured here has the Jacobson bale shredder on the first floor, discharging into a 150 h.p. Model 2436-D Jacobson Ajacs Hammermill with separate fan located in the basement.

For additional information, check No. 7377 on the coupon and mail.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number of the coupon and forwarding it to Feedstuffs.

No. 7297—Ketosis medication, Sheffield Chemical Co.

No. 7298—Auto leasing study, Foundation for Management Research.

No. 7299—Electrical control systems, SEMCO Electric Controls, Inc.

No. 7300—Mobile pelleting machine, Daffin Manufacturing Co.

No. 7301—Feed-health program, the American Cyanamid Co.

No. 7302—Bucket elevator, the Shelby Manufacturing Co.

No. 7303—Water medication, Dr. Salsbury's Laboratories.

No. 7304—Continuous flow dryer, A. T. Ferrell & Co.

No. 7305—Herd treater, Chas. Pfizer & Co.

No. 7306—Fertilizer spreaders, the Simonsen Manufacturing Co.

No. 7307—Grain dryer, the Rolfes Grain Aeration Co.

No. 7308—Bin ventilator, the Tierney-Gerber Roto Vent, Inc.

No. 7309—Custom milling brochure, the Prater Pulverizer Co.

No. 7310—Dust suppressor, The Daffin Corp.

No. 7311—Sample extractor, Testing Machines, Inc.

No. 7312—Vertical feed mixer, Seco, Inc.

No. 7313—Oats filmstrip, The Seedburo Equipment Co.

No. 7314—High flow dryer, The Ace Supply & Equipment Co., Inc.

No. 7315—Merchandising tool, Minute Maid Co.

No. 7316—Grain viewer, Gerber Sheet Metal, Inc.

No. 7317—Industrial mills, The Prater Pulverizer Co.

No. 7318—Molasses blender, The S. Howes Co.

No. 7319—Hanging waterer, The Oakes Manufacturing Co.

No. 7320—Feed handling, Sprout, Waldron & Co.

No. 7321—Bag closure equipment, West Virginia Pulp & Paper Co.

No. 7322—Digestive aid for poultry, Western Condensing Co.

No. 7323—Grain fumigation, Ferguson Fumigants, Inc.

No. 7325—Poultry vaccines, Dr. Salsbury's Laboratories.

No. 7326—Carotene determinations, Laboratory Construction Co.

No. 7327—Two-phase health tablet, Myzon Laboratories.

No. 7328—Manlift safety device, Humphrey Elevator Co.

No. 7329—Thread clipper, Minneapolis Sewing Machine Co.

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No. 7330—Feed analysis table, Amburgo Co.

No. 7332—Protective liners, Protective Lining Corp.

No. 7333—Feed antioxidant, Monsanto Chemical Co.

No. 7334—Vitamin A product, Nopco Chemical Co.

No. 7335—Remote control speed changer, The Reeves Pulley div. of Reliance Electric & Engineering Co.

No. 7336—Bulk and bag transport body, Dodgen Industries.

No. 7337—Beef cattle feeding program, Chas. Pfizer & Co., Inc.

No. 7338—Poultry stress product for water, Dawes Laboratories.

No. 7339—Level control probe, Flo-Tronics, Inc.

No. 7340—Hanging waterer, The Fulton Co.

No. 7341—Pellet mill roll corrugation, The Alloy Hardfacing & Engineering Co.

No. 7342—Automated feeding system, Baughman Mfg. Co.

No. 7343—Distillers feed bulletin, Distillers Feed Research Council.

No. 7344—Phosphoric acid and molasses, Pacific Molasses Co. and A. R. Maas Chemical Division of Stauffer Chemical Co.

No. 7345—Business expansion plan, Butler Mfg. Co.

No. 7346—Insulated egg room door, Keen Mfg. Corp.

No. 7347—Hatching egg, incubator sanitizer, Vineland Poultry Laboratories.

No. 7348—Bulk truck unit, FMC Bulk Transport Systems.

No. 7349—Electric motor, Reliance Electric & Engineering Co.

No. 7350—Turkey range feeder, Oakes Mfg. Co.

No. 7351—Turkey diseases, Merck & Co.

No. 7352—Turkey medication, Upjohn Co.

No. 7353—Bin control equipment, The Burrows Equipment Co.

No. 7354—Grain Trailer, Wilson Trailer Co.

No. 7355—Grain storage building, Parkersburg Rig & Reel Co.

No. 7356—Electric motor bulletin, The Reliance Electric & Engineering Co.

No. 7357—Feed delivery costs, Textile Bag Industry

No. 7358—Individual scours treatment card, Specifide, Inc.

No. 7359—Net weight scale, Toledo Scale Corp.

No. 7360—Feeder-hopper, Cleveland Vibrator Co.

No. 7361—New malathion label claim, American Cyanamid Co.

No. 7362—Rotary positive blowers, Sutorbilt Corp.

No. 7363—Screen frame treatment, S. Howes Co., Inc.

No. 7364—Storage, conveyor liner, Armstrong Cork Co.

No. 7365—Heavy-duty pellet mill, California Pellet Mill Co.

No. 7366—Vitamin-mineral powder, E. R. Squibb & Sons.

No. 7367—Scale maintenance program, Howe Scale Co.

No. 7368—Hanging feeder, Fulton Co.

No. 7369—Feed supplements, Vit-A-Way, Inc.

No. 7370—Feeder machine, The Eriez Manufacturing Co.

No. 7371—Truck leasing plan, Wheels, Inc.

No. 7372—Grain facilities booklet, Aeroglide Corp.

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Tells Provisions for Farm Storage Loans

WASHINGTON—Orville L. Freeman, secretary of agriculture, has taken action to modify down-payment provisions of the farm storage facility loan program, as directed by the President in his message to Congress on farm program proposals, according to the U.S. Department of Agriculture.

Mr. Freeman said that the purpose of the measure is to "encourage storage of grain on farms and strengthen economic activity in farming areas."

Under the new provisions, farmers may borrow up to 95% of the outlay for farm storage facilities costing 40¢ per bushel or less to build. For facilities costing more per bushel, farmers may borrow up to 40¢ per bushel or 80% of the cost, whichever is greater, but not more than 50¢ per bushel of capacity, reports USDA. Previously, loans on these types of facilities were limited to 80% of the cost.

The loans run for five years from the date the loan is taken out. The loan may be repaid in four annual installments with the first installment due on the first anniversary date of the loan. Interest is charged at the rate of 4%, it was reported.

HEADQUARTERS

MYVAMIX VITAMIN E SUPPLEMENT

HOLT PRODUCTS CO.

Box 840, Milwaukee 1, Wisconsin

BROILER FUND DRIVE — A fund drive to gather $135,000 for promotion of the broiler industry is now underway in the Seaford, Del., area. This photo shows John Munro, left, service man for A. W. Perdue & Son, holding a handful of checks amounting to $4,600 that were collected from his firm's growers. At right is Sam Quillin, fund drive chairman.

Seek $135,000 in Delaware Broiler Area

SEAFORD, DEL.—Some 90 people associated with the broiler industry attended a fund drive "kick-off" dinner in the Seaford Golf and Country Club recently. The group's goal is $135,000.

The purpose of the dinner was to organize teams to solicit the money. However, before the campaign officially started, Sam Quillin of Salisbury, chairman of the drive, said $8,500 had been turned in already. This sum included $4,600, which was turned in by John Munro, a service man for A. W. Perdue & Son. The money came from broiler growers who are Perdue customers.

Growers are being asked to contribute $1 for every 1,000 bird capacity. The money that Mr. Munro turned in represented 97% broiler grower cooperation to date, for his firm, it was reported.

George E. Burnett, Salisbury businessman and Wicomico County commissioner, was the keynote speaker.

He told the group that "the money you wish to raise is no handout. It is the purchase by others of shares in an industry that has already proven to be the major reason for the growth of the Delmarva Peninsula."

Mr. Quillin said, "Delmarva's fund drive of $135,000 is less than one-twentieth of the amount most industries of like-size budget would pay for sales promotion and advertising." Last year the group's goal was $125,000.

Assisting Mr. Quillin in the fund drive will be state chairmen: Donald Tatterson, Maryland; Robert Durham, Delaware, and George Brinsfield, Virginia.

All types of businesses are asked to contribute to the Delmarva Poultry Industry, Inc. A "victory dinner" will be held May 6 in the Wicomico Youth and Civic Center. This will be a $100-a-plate affair for those who have made a contribution of $100 or more, it was reported.

Poultry Products Booster Day Is April 27

NEW YORK — Food editors and publicists will be honored from 3 to 7 p.m. April 27 when the Poultry & Egg National Board stages its 13th annual Poultry Products Booster Day at the Henry Hudson Hotel in New York City.

Cooperating with PENB in this event are Delmarva Poultry Industries, Inc.; the National Turkey Federation; the Northeastern Poultry Producers Council and the Long Island Duck Farmers Cooperative, Inc.

Giving support to the theme, "Food Is Fun in '61," will be more than 40 exhibits on tie-ins with eggs and other poultry products by companion food and allied products manufacturers.

Advance reservations must be made with PENB's New York office, 250 W. 57th St., New York 19.

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Ohio Firm Reports Success With Flexible Broiler Contract Program

By Al P. Nelson
Feedstuffs Special Writer

A broiler raising contract, which allows the grower considerable independence in his operation, is used effectively by Yieldmor Feeds, Inc., Piqua, Ohio. The company's sales and service program extends through the Ohio Valley and into the eastern U.S. The broiler contracts are mainly in Ohio and Indiana.

This feed firm's broiler program has been operating for four years, according to Sumner Lyon, secretary and treasurer, and George Gibson, general manager. The broiler plan is progressing so well that it is an important factor in keeping the big Yieldmor mill operating two shifts six days a week.

Yieldmor Feeds, Inc. has about 100 growers on contract who raise approximately 3,000,000 broilers annually. The growers are guaranteed an 18¢ lb. market. Yieldmor furnishes the feed, a hatchery furnishes the chicks and a processor contracts for the end product. The processor sends the check for the finished product to Yieldmor, which in turn pays the hatchery for the chicks and itself for the feed. The grower gets his guaranteed price and if the price received for the broilers is above 18¢ lb., the grower receives all the additional amount. Yieldmor does not participate in any profit.

A grower may, if he wishes, select a hatchery and a processor of his own choice, but most growers use hatcheries and processors handling most of the Yieldmor output. The grower provides housing, medication and litter for the broilers.

Yieldmor Feeds, Inc. has supervisory fieldmen who visit flock owners once a week and work with growers to attain better efficiency and better feed conversion.

"The number of growers contracting with us on broiler production has risen annually," reports Mr. Lyon. "We keep accurate records and can see that our growers are improving in efficiency each year. Our constant expansion problem is to develop growers who are willing to use an efficient program such as ours in order to get profitable results. We know that our growers are making a profit by working with us."

Experimental Farm

A key factor in the broiler program is an experimental farm operated by Yieldmor Feeds, Inc. Here the feed company raises 200,000 broilers annually under ideal housing, feed and sanitary conditions. Mr. Lyon and Mr. Gibson believe that a broiler raiser needs the best housing and equipment available, plus quality feed and care in order to make profit. They say that broiler houses need to be well heated and insulated so that variable weather conditions do not hamper broiler flock growth, or predispose disease situations.

"We constantly check feed and chick improvement at our farm," reports Mr. Lyon. "We try for nutritional improvement and for best efficiency. Our 1960 flocks had the best feed conversion since we have had the farm. On one 66 day feeding period of 15,000 birds, there were 14,994 sold. The average weight was 3.80 lb. and the conversion rate was 2.41. On another flock of 15,000 birds for a 63 day period the average weight was 3.75 and the conversion rate was 2.30. Both flocks were raised during the winter months."

Mr. Gibson and Mr. Lyon, through their company and experimental farm records, show broiler raisers that they can compete in today's market and produce birds profitably.

They point out that the feed firm is constantly urging broiler raisers to inspect the experimental farm. Many do, and take home valuable housing, feed and maintenance ideas.

To aid broiler and turkey growers, Yieldmor Feeds, Inc. also has an arrangement with Dr. Leonard Bailey, Piqua, Ohio, to handle veterinary services. This includes posting of birds in Dr. Bailey's well-equipped laboratory. He also makes occasional trips to visit Yieldmor customers who have flock disease problems. This service is free to customers.

About 200 beef cattle and 400 hogs are also raised annually on the farm.

Producer Clinics

Another important phase of the Yieldmor program is an annual broiler clinic. The clinic idea was started six years ago and has grown in size and influence. It is a one-day event and is usually held at the Elks Club in Piqua. From 8-10 qualified industry speakers give growers expert advice on broiler raising. These speakers include veterinarians, agricultural college and feed industry men. Question periods often bring out solutions to many problems which growers want answered.

"There is no promotion of our feeds at such a clinic," states Mr. Gibson. "We keep it strictly an educational affair. So far as we know it is one of the oldest and largest broiler clinics in the Midwest."

Yieldmor Feeds, Inc. also holds an annual turkey clinic, which attracts many growers. Through the turkey clinic growers are given the opportunity to learn about the latest methods for feeding and caring of birds. This educational work on turkey production is reflected in the high volume of turkey feed tonnage sold by Yieldmor throughout its territory.

Mr. Gibson is chairman of these Yieldmor clinics. He is also chairman of the Ohio Poultry Assn. committee promoting the national chicken contest at the 1961 Ohio State Fair.

In addition to producing broiler and turkey feeds, Yieldmor also makes laying mash, beef, dairy, hog, duck and rabbit feeds. About 75% of the mill's production is pelleted at the present time, reports Mr. Gibson. There is quality control on all ingredients shipped in and out.

Within the past year, Yieldmor Feeds, Inc. opened a branch at Pekin, Ind., known as Yieldmor-Phillips, Inc. From this area, the firm ships feeds into Kentucky and Indiana. During 1961, feed manufacturing equipment, including pelleting facilities, will be installed at Pekin, reports Mr. Lyon. This will enable Yieldmor-Phillips to independently manufacture a complete line of poultry, turkey, dairy, cattle, and hog feeds.

EXPERIMENTAL FARM—Here's a view of the Yieldmor Feeds, Inc. experimental farm at Piqua, Ohio. These facilities house about 200,000 broilers annually in addition to cattle and hogs—all under experimental observation.

MANAGEMENT—A broiler contract is under observation in this photo which shows Sumner Lyon, seated, secretary-treasurer of Yieldmor Feeds, Inc., Piqua, Ohio, and George Gibson, general manager of the firm.

EXPERIMENTAL BROILERS—This photo shows broilers housed in an experimental house at Yieldmor Feeds, Inc., Piqua, Ohio. The firm raises about 200,000 broilers annually at the experimental farm. It has about 100 growers on contract who raise approximately 3,000,000 broilers annually.

Branch Sales Manager

SHREVEPORT, LA.—The appointment of Walter L. Todd, Jr., to branch sales manager of Fulton Co.'s Springdale, Ark., operation has been announced by the Shreveport, La., poultry equipment firm. Mr. Todd is a former member of the sales force of Brookshire & Johnson Farm Supply, Tyler, Texas.

A lifelong resident of Tyler, Mr. Todd is a 1950 graduate of Sam Houston State College and holds B.S. and M.A. degrees in agricultural education.

TRUCK FLEET—Trucks play an important part in business operations at Yieldmor Feeds, Inc., Piqua, Ohio. This photo shows three of the firm's bulk trucks.

FEEDING DISCUSSION—George Gibson, left, general manager of Yieldmor Feeds, Inc., Piqua, Ohio, is pictured here talking with the firm's experimental farm manager about the cattle feeding project in background.

Pet Food Institute Reports Chairmanship

CHICAGO—Max E. Stults, general manager of Ralph Wells & Co., pet foods division, was elected chairman of the membership committee of the Pet Food Institute during the mid-winter meeting recently held in Chicago.

Max E. Stults

The Monmouth, Ill., executive is currently serving his second term as a director of the institute, the national association of pet food manufacturers. Member companies presently produce about 85% of all dry and about 65% of all canned pet foods in the country.

According to Mr. Stults, plans call for enlarging PFI membership in the coming months. Noting that the institute offers research and survey services ranging from pet food nutrition to labor statistics, the new chairman issued a call to all sizes of manufacturers to participate in the PFI.

The recent session, attended by the board of 18 directors from different companies, also dealt with state regulations which control pet food labeling, the national publicity program and enlargement of the institute's services to its members.

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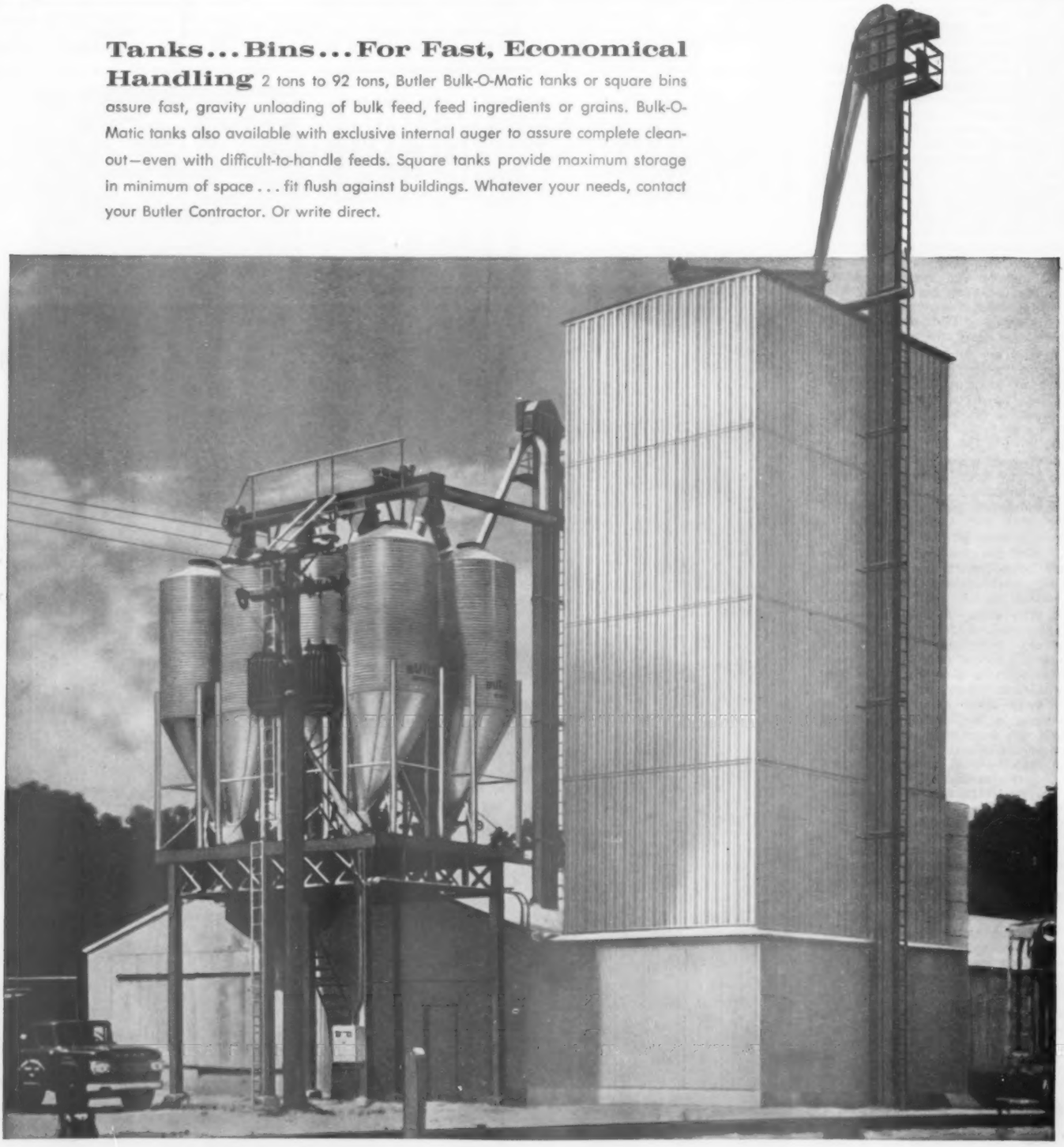

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What Are Feed Men Thinking About FDA Regulations?

Confused and Concerned, They Ask for:

- **Clarification of Rule Meanings**
- **Pin-Pointing of Enforcement Responsibilities**
- **Fair Representation of the Industry to the Public**

By Al P. Nelson
Feedstuffs Special Writer

Confusion and concern among feed manufacturers, feed dealers and their farmer customers over new regulations of the Food and Drug Administration which affect meat, milk and egg production was obvious when I recently toured parts of the four midwestern states of Illinois, Indiana, Ohio and Wisconsin.

Feed men and farmers I interviewed agreed that reasonable restrictions on the use of drugs in feeds are required in the interests of protecting the consumer. But they also said some of the FDA rulings which have been imposed recently have created needs for clarification of regulations, pin-pointing of enforcement responsibilities and fair representation of the feed industry and animal agriculture to the public.

Feed men have many questions because of the FDA regulations. A great number do not understand what the mandates really mean. The following "whys" are a representative sampling of the questions which have arisen from this confusion.

1. Why try to place new restrictions on "new drugs" in products (such as concentrates) when these products have been tested and sold in hundreds of instances for several years with no indicated safety problem?

2. Why allow any new drugs to be sold in any form before manufacturing, wholesaling, retailing, mixing and consumer responsibility directives have been spelled out for all handlers, even farmers

3. Why give the feed man the appellation of pharmacist before outlining qualifications and required provisions in this field?

4. Why allow the farmer to purchase packaged shelf items containing new drugs and then refuse to allow him to use such items without certification or have his local mixer use them in the grind-mix process?

5. Why allow a veterinarian to prescribe a feed formula involving use of new drugs without making certain he has clearance for the product and that the feed mixer legally can mix such a formula?

6. Why is the feed man suddenly a "policeman"—without the specialized preparation for his task? Where are the easily understood statutes and the clear directives to explain what he can and cannot do and how he shall police himself and his customers?

Many Problems

I learned that in certain cases farmers have become irritated because feed men will not mix feeds according to the prescriptions of some veterinarians, or because feed men will not mix feeds with new drugs customers ask for or bring to the mill themselves.

"Two customers came to see me one day and wanted some new drugs mixed in their feed," one Indiana mill owner told me. "I said I couldn't do it, and told the men why. They laughed and said, 'Well, you are passing up some profitable business. We know where we can get it done if you won't do it for us.' "

A regional feed manufacturer had this view of the FDA regulations: "One product is considered safe with 300 gm. of a certain drug per ton, but a similar product containing 150 gm. of the drug is not safe. If the drug was considered safe at a higher level, why not at a lower?"

An Ohio feed manufacturer selling within the state said, "If the new drugs are so unsafe that they cannot be used without special permits, why use them at all until the situation is clarified?"

One supplier pointed out that a product of certain description was acceptable to the state, but not to the FDA. "Why don't they get together?" he asked. "This product was sold for quite a while in this area, and there were no deleterious effects."

"I used to work very closely with veterinarians on medicated feeds," one mixer said, "and we never had any trouble. Now he has to check and I have to check on permit requirements while the farmer has to wait. Who knows what to do and why? I'm losing some customers due to this confusion and so are others. I want to obey the law, but what the hell is it? Why issue orders first and then explain them afterward? Why not explain first, so we know what we have to do by certain dates and where responsibility starts and stops?"

One regional feed manufacturer, who also has a custom mixing service, has a large hog farm. "I use a lot of certified drugs in my feed for these hogs. Hogs have been raised for 100 years on this farm and antibiotics are now doing a job here that former owners should have done all these years. Arsenicals will put hogs on the market 30 days sooner than under previous methods. But let's have some clear understanding on what we can do under the regulations and what we can't do."

At another large custom mill op-

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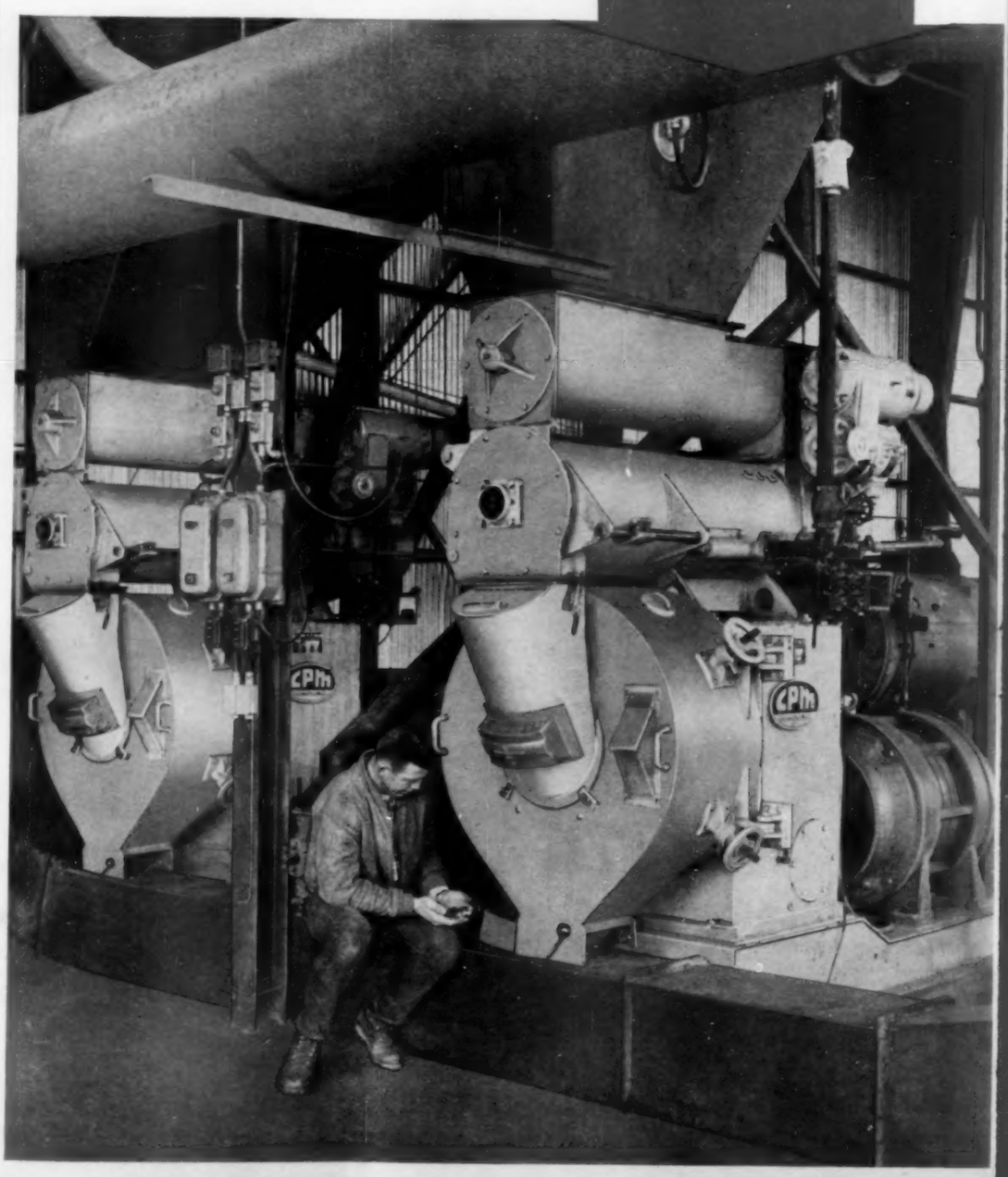

N. K. Parrish

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eration the owner said, "No FDA inspections here yet. I'm sticking to the concentrates supplied me, and turning away any other mix deals that might involve new drug certifications. I'm taking no chances, and I'm doing pretty well. If my suppliers get in trouble with Uncle Sam, then I'm in trouble, too. You've got to depend on someone in this business, and I'm stringing along with him and trying my best to keep my nose clean."

A large cooperative which has several mills and makes its own feeds, reports no FDA inspections recently.

"We pay strict attention to storing drugs used in feeds and also in labeling," reports the manager. "If the new-drug regulations have accomplished anything, they have, I think, made many feed men pay more attention to the use and storage of all drugs used in feeds. We've got to study the regulations on our own and figure them out, with help from authorities in the field. Nobody is going to set up a school for us. Business doesn't operate that way. You've got to be a self starter on anything that affects your business. Find out—that's our motto—even if what you find out isn't to your liking."

A regional feed manufacturer said, "The farmer can buy arsenicals in certain drug outlets, go home and put them in his feeds if he wishes and use them that way. But he cannot bring those arsenicals to us and ask us to mix them in his feed. This is a situation which needs to be straightened out in many areas. After all, pork marketed by farmers who can use arsenicals in farm mix operations and pork marketed by farmers who observe stricter drug regulations through our grind and mix facilities go to the same consumers, in many cases. Which pork is or is not safe for the consumer? Or is all the pork safe?"

Inspected Regularly

A flour-feed mill owner stated that FDA inspections of his corn meal and flour operations are regular and thorough.

"I know that sooner or later feed operations will get the same sort of close checkup," he said. "I'm studying all I can about the new drug regulations and how they might affect me. I'm not going to risk doing anything wrong, intentionally or unintentionally, even if I lose a few stubborn customers.

"With all this emphasis some of the colleges and the county agents are putting on 'mix-your-own-and-save-money,' some farmers are encouraged to try almost any kind of mixture. Sorta like the old prohibition days. If this keeps up, brother, a lot of poultry and livestock production is going to reach the market in variable condition."

FEED FIRM MANAGER

DETROIT LAKES, MINN. — Paul Suomala, a Nutrena feeds representative during the past year, has been named manager of the Lake Feed Co. in Frazee.

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California presents the CPM Model "200" —a Big Performer for Big Operations Pelleting Bulky Feedstuffs

California proudly introduces an important addition to its line of pellet mills: the CPM Model "200" — a special-duty mill that has been designed, engineered, fully field tested, and is now offered to the industry as another CPM first.

Equipped with its huge 200 HP motor, the CPM Model "200" swallows up the bulkiest, balkiest feed ingredients — such as alfalfa, beet pulp, barley, and a long list of other light materials — pellets them through a 600 pound die at more than double the capacity possible with previous big-size standard pellet mills. This is without question the ideal machine for producing ¼" and larger size pellets for dairy, feedlot and other large rough-duty operations.

Featuring the exclusive CPM Full Power Gear Train Drive, standard on all CPM models, the Model "200" delivers to the pelleting die *all* the power you pay for. Not two-thirds. Not three-fourths. But the full 200 horsepower output! Here is your assurance not only of greatest operating economy, but also of maximum safety, long and trouble-free service life.

Whether your special-situation requirement calls for a Model "200" or a much smaller machine, you'll find that the complete CPM line offers you the widest, finest choice ever available. Now is a good time to see the man from CPM. His expert help and assistance may well mean a more highly profitable feed production program for you this year and the years ahead. *Remember: More California Pellet Mills are sold today than all other makes combined!*

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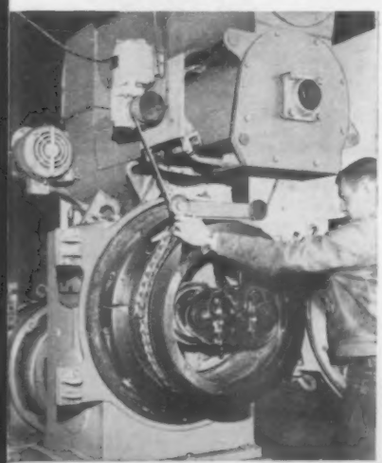
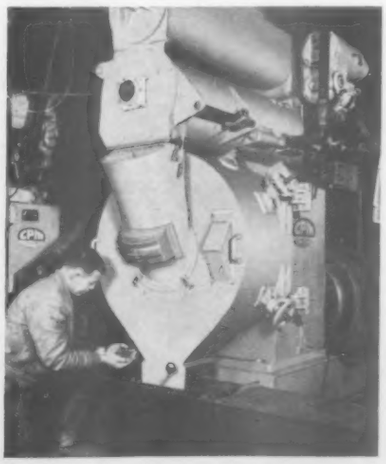
See the Model "200" at the NFIS, Chicago, May 7-10, Booths 106-109!



Look at the size of the pellet die, shown here being positioned on the Model "200"! Die is more than twice the size used on largest standard model pellet mills today, yet is easily changed by means of built-in electric hoist.



Charles "Ozzie" Harris, manager of Delta Dehydrating Corp.'s Clarksburg, California plant, checks pellet run on CPM Model "200". This pellet mill is operated 24 hours per day during peak production periods, producing both alfalfa and beet pulp pellets in ¼" size.

Use of Electricity to Kill Grain Insects Told

WASHINGTON — Some species of insects in stored grain can be killed by a few seconds' exposure to high-frequency electric fields, the U.S. Department of Agriculture reports.

In studies conducted by USDA's Agricultural Marketing Service at Manhattan, Kansas, and the Agricultural Research Service at Lincoln, Neb., insects in stored wheat and wheat shorts were exposed to high-frequency electrical treatments of different frequencies and field intensities to determine their effect on mortality and reproduction of the insects.

Use of high-frequency radio waves for killing insects is not new, but more information was needed on their effects on insects in stored grain.

Insects included in the high-frequency electric tests were: adults of the rice weevil, granary weevil, confused flour beetle, and lesser grain borer; and immature stages of a dermested beetle, the rice weevil, and the lesser grain borer.

Many of the insects not killed by the more severe exposures were injured. Most of the injured ones died within a week after exposure. Some of the rice weevils and confused flour beetles were able to reproduce after exposure.

Cost of treatment was estimated at from 2.8 to 3.7¢ per bushel of wheat.

Details of the experiments are given in a 52-page report with 25 tables, 31 charts, and four halftones. A free copy of the report, "Effects of High-Frequency Fields on Certain Species of Stored-Grain Insects," Marketing Research Report No. 455, may be obtained from the Office of Information, U.S. Department of Agriculture, Washington 25, D.C.

Cornell Conference Planned Nov. 1-3

BUFFALO, N.Y.—Cornell University's 1961 nutrition conference for feed manufacturers will be held Nov. 1-3 at the Statler Hilton Hotel in Buffalo.

The conference is sponsored by the departments of poultry and animal husbandry, the department of biochemistry and nutrition and the graduate school of nutrition, all at Cornell University, and is conducted in cooperation with the American Feed Manufacturers Assn.

This year's chairman is Dr. Douglas E. Hogue of the department of animal husbandry at Cornell. Vice chairman is Prof. Robert J. Young of the poultry department.

Copies of the conference program and cards providing for pre-registration and hotel reservations will be mailed in late August to persons who attended previous conferences. Persons not on the conference mailing list may obtain copies of this material by writing to Dr. Douglas E. Hogue, Wing Hall, Cornell University, Ithaca, N.Y.

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...says Monroe Babcock, President,

Monroe C. Babcock
President
Babcock Poultry Farm, Inc.

Telling of this experiment, Mr. Babcock reports, "During the first five months of full production our layers needed only 2¼ pounds of feed per pound of eggs produced (3½ lbs. of feed per dozen).

"The proper level of methionine in the diet of high-producing layers makes a big difference in performance, particularly during the peak of production. In a recent experiment we found the addition of 2 to 2½ pounds of 'Hydan' per ton of caged-layer ration resulted in 11¢ to 28¢ more profit per bird during the *first five full months of lay.*

"Representatives of the Du Pont Company approached us last summer with information indicating that a high-producing bird such as our Babcock layer is capable of producing a pound of eggs on less than 2½ pounds of practical ration...*if* the level of methionine in the diet is adequate.

"An arrangement was made with Dr. M. L. Scott, an authority on Poultry Nutrition, to design and supervise an experiment with methionine as a variable and coordinate with Du Pont Company and Dr. Hill of the Babcock Poultry Farm." In describing this experiment, Mr. Babcock says, "The hens used in this experiment were typical Babcock layers of the same background and housed in one of our commercial laying buildings. The experimental diets were fed as the only ration from the start of production, as is done in commercial practice.

"The test was started in July, and the results are cumulative from mid-August through mid-January. Egg size was normal, being 53-54 grams per egg at the start and about 62 grams per egg at the finish. Eggshell quality was uniformly excellent. In all respects the conditions of this experiment simulated commercial practice; therefore, the results are of special value. This experiment demonstrates the type of cooperation between geneticists, nutritionists and industry that makes for continuous agricultural progress."

From left to right: **Dr. Jack Hill,** *Director of Research at the Babcock Farm,* **Dr. M. L. Scott,** *an authority on poultry nutrition, and* **R. B. Bishop** *of the Du Pont Company coordinate test data in the Babcock Farm reception room.*

3½ pounds of feed per dozen feed supplement in ration"

Babcock Poultry Farm, Inc.

Summary of experiment

Four hundred thirty-two Babcock pullets were randomly distributed on the basis of body weight into 8 rows of double cages at about 2 weeks prior to the onset of egg production. The experimental diets were mixed under Dr. Scott's supervision and consisted of two practical high-efficiency formulas both with and without the methionine supplementation calculated to be necessary for maximum feed efficiency. Egg size and body weight were checked at the beginning and end of the experiment. Feed consumption and egg production were recorded at 30-day intervals. Although the test period included the cold-weather months of December and January, one diet supported a five-month daily average of 9.0 pounds eggs per 100 hens on an average feed consumption of 20.0 pounds feed per 100 hens daily. *This performance was equivalent to 2¼ pounds of feed per pound of eggs, or 3½ pounds of feed per dozen eggs for the five-month period.* With both control diets, the addition of "Hydan" increased production rate and improved feed conversion about 10%.

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Present Dim Views of Prospects for More Production of Broilers in Ohio

COLUMBUS, OHIO—Broiler production has increased or is being increased in some parts of the North. However, a not very optimistic picture for the maintenance or expansion of broiler production in Ohio was painted in discussions of the broiler industry outlook at an Ohio broiler and market egg school. Some speakers did say, though, that the situation could be changed if certain conditions were to be changed.

Ralph Mobley of the Cotton Producers Assn., Atlanta, outlined some of the advantages of southern broiler operations and went on to provide some answers to the question "Have you got what it takes to compete in the broiler business?"

His answer to Ohio people was, "Yes, provided the need is great enough for you to be in the broiler business. What labor income must you receive to make broiler farming pay more or as much as you can obtain from other types of farming in Ohio?"

Southern Costs

Mr. Mobley said that members of his cooperative need broilers in their farming business provided they can obtain at least 2¢ per pound of live birds produced. They are not interested in growing broilers if their returns drop below 2¢ lb.

"The grower who makes less than 2¢ lb. under our present conditions on a yearly basis usually is the inefficient grower," he continued. "The better broiler growers average 2½ to 3¢ lb.

"What expense does he have to come out of this payment of 2 to 3¢ per pound of broiler meat produced? The grower furnishes the facilities (land, houses and equipment), fuel for brooding, litter lights, water and labor. I would estimate his production cost other than labor to run about 1¼¢ per pound. This would leave a labor income of ¾¢ to 1¾¢ per pound, depending on performance. The average labor income would be close to 1¢ per pound or $33 to $35 per thousand broilers marketed.

"I do not know if you need the broiler business enough to compete with the South, because you may be able to receive more money by investing your time and money in some other farming operations. However, the farmers in the broiler areas of the South are interested in producing broilers for this amount because larger numbers are being grown each year on this basis."

The processor's point of view was presented by George Petit. He said that Ohio processors are gradually going out of business or are going into distributing southern broilers because they can't buy broilers at a price which would allow them to compete with the going market. "The day is here," he said, "when the Ohio processors can't pay over the southern live market at the farm for broilers and stay in business."

Some of the things mentioned by Mr. Petit were these: It costs 1 to 1½¢ lb. to truck southern dressed poultry to Ohio, but the Ohio processor also has a delivery cost of about 1¢ lb. In the South, condemnation is charged back to the grower; in Ohio the processor stands most or all of the loss. Labor costs are higher in Ohio. Hauling and shrink costs from farm to plant are higher because of more scattered plants. Other transportation data also were cited. Ohio processing plants are paying mostly 1¢ lb. over the Georgia "mostly" market at the farm.

Mr. Petit made this comparison between a southern plant and a USDA-inspected plant in Ohio: "If the Georgia mostly live market is 15½¢, they figure a 73% yield, which gives them a yield cost of 21.23¢ lb., plus a processing and delivery cost of 6.5¢ lb., making a total price delivered any place in Ohio of 27.73¢ lb. . . . The Ohio processor would figure Georgia mostly live 15½¢, plus 1¢ premium, or 16½¢; at 73% yield, a 22.6¢ yield cost plus processing and delivery cost of 7¢, making a total delivered cost of at least 29.6¢. Including condemnation, total disadvantage would be 2.19¢."

Mr. Petit's farm halted processing and now distributes others' broilers.

He said: "We feel the only way a large operation in Ohio could be competitive enough to recapture the dressed market would be to have a completely integrated operation, with each segment carrying an equal share of responsibility.

"We have approached several feed manufacturers on this basis, but to date we have had no takers. We would not consider starting our processing plant again unless we were guaranteed a minimum of 5 million broilers per year at the Georgia mostly market, with all condemnation charged back to the grower."

Feed Man's View

H. L. Edwards of the Wooster (Ohio) Feed Mfg. Co. pointed out that larger processing plants have been closing, and he said that smaller plants selling to independent grocers and independent chains are the one best hope of staying in the broiler business.

"Our entire problem," he said, "has centered on the question of the premium that could be paid above the Georgia 'mostly' quotation. All last year the premium was 1½¢ over Georgia, and at most times in 1960, producers made money. Processors who shut down first said they could not pay more than a cent over Georgia mostly, and later they said a half cent premium was all they could stand. . . . At present the 1½¢ premium has been reduced to 1¢. . . . Insofar as the sizeable proportion of total volume handled by major chains is concerned, the South has made good on its threat to capture our markets."

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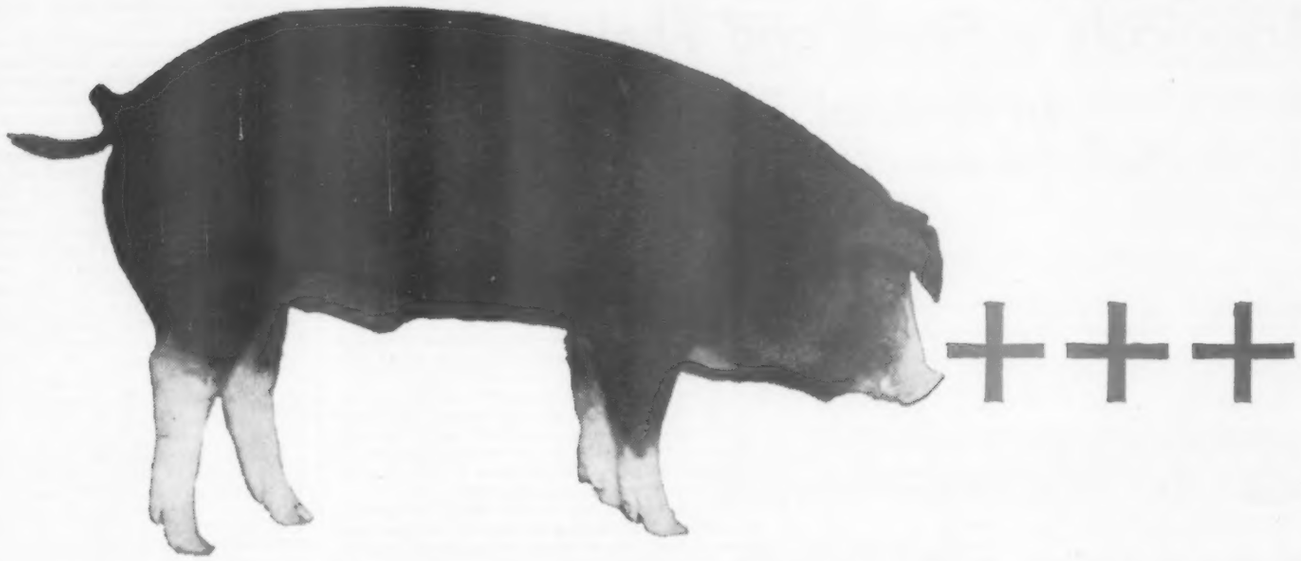

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Arsenicals in Feeds and Their Residues in Animal Tissues

By Douglas V. Frost, Henry S. Perdue and Lacy R. Overby

Abbott Laboratories

Modern chemotherapy began in 1907 with organic arsenicals. But inorganic arsenicals were used in medicine from the time of Galen. Fowler's solution containing 1% arsenic trioxide, began as a general tonic and panacea for chronic non-parasitic skin diseases in humans in 1786. Over-medication with inorganic arsenites, sometimes led to frank signs of chronic arsenic poisoning, such as hyperkeratosis and pigmentation. This heroic therapy was a panacea for 150 years, in a period when medicine was expected to "kill or cure."

Pentavalent organic arsenicals, such as sodium arsanilate (2), were never associated with the adverse effects ascribed in the medical literature to inorganic arsenites. Two arsanilic acid derivates, p-ureidophenyl arsonic acid (Carbarsone®) and bismuth glycol arsanilate (Milibis®) have been and are widely used in human medicine. They have never been indicted as causing hyperkeratosis or other skin abnormalities associated with inorganic arsenite therapy.

Arsenic is ubiquitous in nature. Calculated as As_2O_3, soils contain 0.3 to 40 ppm. and vegetation 0.1 to 10 ppm. Sea water contains traces which are concentrated to levels as high as 12 ppm. As_2O_3 in marine algae and considerably higher in crustaceans. Yeast fermentation may be stimulated by traces of arsenic. In general, plant growth is not inhibited by soil concentrations below 2 ppm. As much as 400 lb. per acre of $Ca_3(AsO_4)_2$ has been used as a pesticide with no apparent injury to cotton plants. Arsenic used as a crop spray is removed from the soil by normal processes of leaching and reduction to volatile derivatives. Inorganic arsenicals dominated important areas in agricultural pest control for many years, but have been largely replaced by other agents.

USE IN FEEDS—Discovery of the coccidiostatic, growth promoting and dysentery preventing properties of arsonic acids coincided with the advent of medicated feeds. Because of their multiple uses, economy and proven specific value, organic arsenicals have now achieved important status as aids to animal production. Agricultural colleges and experiment stations, feed and drug manufacturers, USDA and feed control officials all participated in perfecting and applying these new tools.

The Veterinary Division of the Food and Drug Administration considered each drug carefully in light of existing knowledge. Extensive studies by the U.S. Public Health Service (3) of orchardists around Wenatchee, Wash., provided a basis in 1941 to establish a tolerance of 3.5 ppm. As_2O_3 on certain fruits. This position was reestablished in findings of fact for the Pesticide Chemicals Amendment of 1954 covering 16 fruits and 25 vegetables. One pertinent statement (4) reads, "Calculated as As_2O_3, about 3 milligrams a day can be tolerated without hazard to man."

Residues of "arsenic" virtually disappear from the tissues of livestock when the arsenical containing feed is removed 5 days before slaughter (5, 8). Two day removal brings tissue "arsenic" down rapidly. It was on this basis that applications for certain carefully studied arsonic acids were first made effective. But animal products were not accorded the same tolerance applicable to many fruits and vegetables. Since 1941 no evidence has appeared to incriminate traces of arsenic in foods, or any arsenical for that matter, as hazards to public health. Indeed just the opposite is true. Organic arsenicals have been successfully made and used to much larger amounts than ever before. Speaking from our own experience, there have been no authenticated reports in animals of adverse effect from arsanilic acid in properly controlled manufactured feeds, or in workmen handling the drug.

The precise AOAC colorimetric method for arsanilic acid facilitates its close control in feeds (5a). Determination of 3-nitro-4-hydroxyphenylarsonic acid and arsenosobenzene, based on their arsenic content, is aided greatly by new methods. Thus the Evans-Bandemer improved method (5b) for determining arsenic in biologic materials is based partly on the simplified magnesium nitrate ashing method of Bandemer and Schaible (5c). These provide a working basis to establish an improved official method for arsenic (5d).

Five organic arsenicals are now in use in medicated feeds for chickens, turkeys and swine. The common chemical name, tradename, recommended use level, species recommendations and general label claims are shown in Table 1.

RECENT RESEARCH

Research during the last year suggests that the tiny residues of arsenic found in the liver of pigs fed arsanilic acid is metabolically inert. When such liver was fed to rats the trace arsenic was rapidly and completely excreted. These results parallel the findings by Coulson, Remington and Lynch (J. Nutrition 10, 255, 1935). Their work clearly showed that the organically bound arsenic in shrimp was retained to lesser degree by rats than was the arsenic of a similar dietary level of arsenic trioxide. Traces of arsenic in meat are also bound in definite organic combination, different from that in shrimp, but none-the-less so firmly bound as to appear chemically inert.

Because arsenic is ubiquitous in nature, one cannot study its nutrient role by classical methods. The lowest level of arsenic thus far achieved still supplies at least 0.02 ppm. Quantitatively this is like one drop in 250 buckets, or 1 minute in 100 years. Still, this amount is equivalent in each 100 gm. of diet to 16,000,000,000,000,000 atoms of arsenic. Clearly, nature enforces a tolerance to such ubiquitous elements. Obviously, also, more research is needed to establish the metabolic role of the tiny traces of arsenic present in every living cell.

The question logically comes, "What is the highest desirable level of arsenic in the diet?" Obviously we just don't know. The level will certainly vary greatly for different arsenicals. Even the most toxic arsenicals known are well tolerated at levels which supply 10-20 ppm. in the diet. This is several times the minimum toxic level of selenium and several hundred times the nutrient level for selenium. Nutrition Reviews 18, 129 (1960) discusses the interesting relationship between arsenic and selenium in relation to the Food Additive Law. In any case, we should now place the entire matter in proper scientific perspective.

"ARSENIC" RESIDUES—The following points were established in exploring the safety of arsanilic acid for use in feeds. These points are thought to apply for other organic arsenicals approved for feed use.

1. Arsenic does not accumulate in tissues with continued feeding of arsanilic acid. If anything it decreases in liver and bone (5). This is also true for eggs from hens fed arsanilic acid (6). Levels of arsenic in liver and muscle of broiler chickens fed 0.005% arsanilic acid are only slightly above those for controls.

2. The level of arsenic deposited in specific tissues reflects the level in the diet (5, 8). Liver and kidney arsenic rises more with arsenical feeding than is true for muscle, skin or fat. But the bulk of edible tissues appears to contain considerably less than 0.5 ppm. of arsenic throughout arsenical feeding schedules. This was also apparent from unpublished data on tissue residue studies made available to the Scientific Advisory Committee of the Animal Health Institute. These data covered the use of each of the arsenicals shown in the table.

3. At the recommended 90 gram per ton feeding level for arsanilic acid the ppm. of arsenic shown in Table 2 were found in tissues on the last day of feeding.

4. Lambs fed potassium arsenite, arsanilic acid, or 3-nitro-4-hydroxyphenyl arsonic acid at 0.002, 0.004 or 0.006% of the ration all had less than 1 ppm. arsenic in liver, kidney and muscle (9). The levels decreased measurably, however, to about 0.1-0.2 ppm. (the level for controls) two days after the arsenicals were removed from the feed. Up to 0.2% 3-nitro-4-hydroxyphenyl arsonic acid, 0.05% arsanilic acid and 0.1% potassium arsenite appeared to be tolerated by lambs for 56 days, but gave unusually high levels of arsenic in their tissues, i.e., up to 13 ppm. in liver.

5. Beef calves fed arsanilic acid at levels of 50, 150, 250, or 350 mg. per day deposited less than 0.7 ppm. As. in the liver for the highest feeding level (10). Only 0.2 ppm. or less arsenic was found in kidney, spleen, muscle or rumen wall in any of the calves. The calves were fed from about 460 to 760 pound weight and received arsanilic acid throughout.

No recommendation is made to date for use of organic arsenicals in cattle or lambs. Approved uses are cited for arsanilic acid and 3-nitro-4-hydroxyphenyl arsonic acid in combination with antibiotics for prevention or control of infectious enteritis in poultry, swine, and calves (12).

6. Chickens, turkeys and pigs succumb when the level of arsenic in the liver rises much above 5 ppm. (7). At this level of arsenic in the liver, however, arsenic in muscle is still less than 1 ppm.

The amount of arsenic appearing in tissues reflects the toxicity of a particular arsenical for that species (7, 9, 12). Different species differ in tolerance to different arsenicals, but all species tested tolerate the generally recommended feeding levels.

SIGNIFICANCE OF ARSENIC RESIDUES—Certain deductions can be derived from the above, which appear pertinent to the questions at hand:

A. Animals receiving 0.005, 0.01 or 0.02% arsanilic acid appear to deposit only tiny fractions of the 17, 34 or 68 ppm. of arsenic from this source in their diet. They soon become saturated for each particular level of dietary arsanilic acid and are thenceforth assumed to be in arsenic balance. The amount of arsenic in eggs reaches a peak within the first week of arsanilic acid feeding (11) and thereafter tends to decrease (6).

B. The amount of "arsenic" retained in the tissues of animals is very small. On average, less than 1/500th of arsanilic acid "arsenic" is retained in the tissues of pigs fed the drug from weaning to market.

C. Pigs from weaning to market or hens throughout a production year

TABLE 1. Organic Arsenicals in Use in Medicated Feeds

Arsenical	Level in Complete Feed	Species	Value
Arsanilic acid (ProGen®)	.005-.01	Chickens	Stimulate growth
		Laying hens	Improve feed efficiency
		Growing turkeys	Protect against
		Swine	infectious enteritis
3-Nitro-4-hydroxyphenyl-arsonic acid (3-Nitro®)	.0025-.005	As above	As above — also prevent coccidiosis in chickens at 0.009% (as Nitrosal®)
4-Nitrophenyl arsonic acid (Histostat®)	.025	Growing turkeys	Prevent blackhead
4-Ureidophenyl arsonic acid (Carb-O-Sep®)	.0375	Growing turkeys	Prevent blackhead
Arsenosobenzene (Arsenø®)	.002	Chickens	Prevent coccidiosis
		Laying hens	

TABLE 2. Arsenic Found in Tissues in Last Day of Feeding

	(Parts Per Million)					
	Liver	Kidney	Muscle	Fat	Skin	Gizzard
Chicken (5)	1.0–1.5	0.8–1.4	0.1–0.2	....	0.15–0.2	0.4–0.9
Turkey (7)	0.8–1.5	.....	0.3–0.7	....	.....	.....
Pig (8)	1.0–3.0	0.7–2.0	0.1–0.3	0.2	0.2	.....

EDITOR'S NOTE: *The accompanying article was presented at the Invited Symposium on Chemical Residues in Agriculture at Michigan State University in 1960. It was a closed symposium and was the first state-sponsored meeting along this line. The manuscript on "Arsenicals in Feeds and Their Residues in Animal Tissues" has now been released for publication. It is a paper which is of interest and importance to feed manufacturers and others, particularly in view of government regulatory problems. The authors, who are authorities on arsenicals in feeds, are Dr. Douglas V. Frost, research specialist in nutrition, and associates at Abbott Laboratories, North Chicago, Ill. In addition to the symposium paper, Dr. Frost has contributed the above bold face report on recent research.*

ingest about 150 times as much arsanilic acid "arsenic" as the 3 mg. per day tolerance suggested for humans (4). Such feeding confers benefits to livestock, as attested by more than 100 scientific reports.

D. The British pharmacologist, A. C. Frazer, cited arsenic as an example in illustrating the judicious addition of chemicals to foods where this conserves the world's food supply and is not deleterious to health (14), viz. "The therapeutic dose of arsenic (As_2O_3) is of the order of 5 mg.; the toxic dose about 50 mg.; and a likely fatal dose about 500 mg. An ineffective level of dosage is 0.5 mg., and this is the same order of dosage that may result from the ingestion of arsenic in food within the limits of tolerance."

Calculating from average residues of arsenic for arsanilic acid fed animals, one would have to consume at least 4.2 lb. of muscle, 0.7 lb. of liver, or 38 large eggs to get 0.5 mg. of arsenic.

E. It is biologically impossible to raise the residue of arsenic in edible tissues of food animals above an average of less than 1 ppm., well below that normally found in sea food.

CONTINUING RESEARCH—The fate of organic arsenicals ingested with food is under intensive study in our laboratory. In preliminary studies in pigs (15) about 95% of ingested arsanilic acid "arsenic" was found in the feces. The form of the arsenic in the feces was not determined in this study.

In unpublished work now in progress with hens, at least 90% of ingested arsanilic acid was recovered analytically unchanged in the droppings. The tissue "arsenic" appears organically bound. It cannot be chemically reduced and volatilized as arsine. Inorganic arsenates added to macerated liver from control animals can, however, be so reduced and distilled.

The question is raised whether even a trace of inorganic arsenic is released to the tissue following organic arsenical feeding. A reasonable tolerance for inorganic arsenic is already allowed for many foods. Millions of humans and billions of animals have received organic arsenicals. When used as recommended, we know of no evidence of injury from these agents. There is, however, good evidence of their value to improve health of animals.

Research is continuing to establish the metabolic fate of arsanilic acid; also to establish its effects on reproduction, general health and longevity. Rats, chickens and pigs are being used in long term studies. Some of these now extend 3½ years with no evidence of ill effect.

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California Scientists Experiment With Low-Fiber Rations for Fattening Lambs

BERKELEY, CAL.—The fattening of lambs on a low roughage ration was studied in two experiments at University of California at Davis to determine whether sheep, like cattle, can be fattened on rations with low-fiber content.

The research was conducted by Dr. J. H. Meyer and A. O. Nelson of the animal husbandry department.

Rations containing 5% and 30% alfalfa hay were compared in the first experiment. Steamed rolled barley, protein supplements, fat as stabilized tallow, and minerals comprised the remaining portion of the rations. Approximately twice as much fiber was present in the 30% alfalfa hay ration as in the 5% alfalfa hay ration. Both rations were unusually high in protein to allow a comparison of low and medium fiber rations, according to the researchers.

Daily gains were significantly reduced when the low hay or fiber ration was fed, they reported. This was partially caused by a longer adjustment period to bring the animals on feed. But the reduction in gain was compensated, to a large extent, by a higher dressing percentage for the lambs fed the low fiber ration, the researchers said. The carcasses produced were exactly the same in weight—58.4 lb.—indicating that the difference in gain was due to rumen fill. No difference was found in carcass grade.

Though less feed was consumed by the lambs fed the low fiber ration, feed utilization efficiency was reduced as compared to lambs on higher fiber ration, according to Dr. Meyer and Mr. Nelson.

In the second experiment the lambs were divided into three lots. The lambs in lot 1 were fed a low fiber ration and compared to the lambs in lot 2 and in lot 3 that were fed a higher fiber ration in both the milled and pelleted forms. The lambs in lot 1 received steamed rolled barley and a supplement devised to satisfy further protein, vitamin and mineral needs not supplied by the barley. The lambs in lot 2 received a mixed milled ration and those in lot 3 received a Sudan and alfalfa hay pellet mixed with steamed rolled barley.

There were no significant differences in daily gain among the lots. However, the researchers found that less feed was consumed per day by the lambs in lot 1, on the low fiber ration, than in the first experiment but in the second experiment there was an improvement in efficiency of feed utilization. Also, there was an improvement in dressing per cent for lot 1 but little difference in carcass grade.

More Time Required

In both experiments, more time and care were required to accustom the lambs to the low fiber ration than for the lambs on the other rations. From 10-14 days were required to bring the animals on feed. It proved necessary to have the low fiber ration available to the animals at all times. When twice-a-day feeding was attempted, difficulty was experienced in maintaining high feed intake.

There may be situations when an essentially all-concentrate ration has advantages over a ration containing more hay, the California researchers said. The high concentrate ration requires less storage space and less labor in preparation and in feeding. Also, concentrates in California are often a cheaper source of net energy than roughages. A third situation would be when lamb producers and feeders need to finish lambs more rapidly than is possible under range or pasture conditions in order to take advantage of earlier marketing or to avoid the deleterious effect of oncoming wet weather in the fall. Lambs being produced on the range or irrigated pasture may be approaching a choice finish but the range or pasture might not be sufficient to finish the lambs to the desired grade. In such a case, it would not be difficult to fatten the lambs on an essentially all concentrate, low fiber ration because little milling equipment would be needed. Possibly the lambs could be self-fed barley on the range or pasture and not placed in dry lot, the University of California research team advised. Steam rolling the barley might not be necessary, as sheep chew whole grain sufficiently for complete digestion.

The current experiments show that it is possible to feed fattening lambs a ration composed of 90 to 95% concentrate and little hay. Satisfactory gains can be obtained on a low fiber —6-7% crude fiber—ration. Yield of carcass or dressing per cent was higher for sheep fed the low fiber rations.

A LONG, LONG CAREER —BUT NOT IN BASEBALL

NASHVILLE, TENN.—Jesse G. Peak never grew tall enough to be an athlete. That's what he wanted to be, an athlete.

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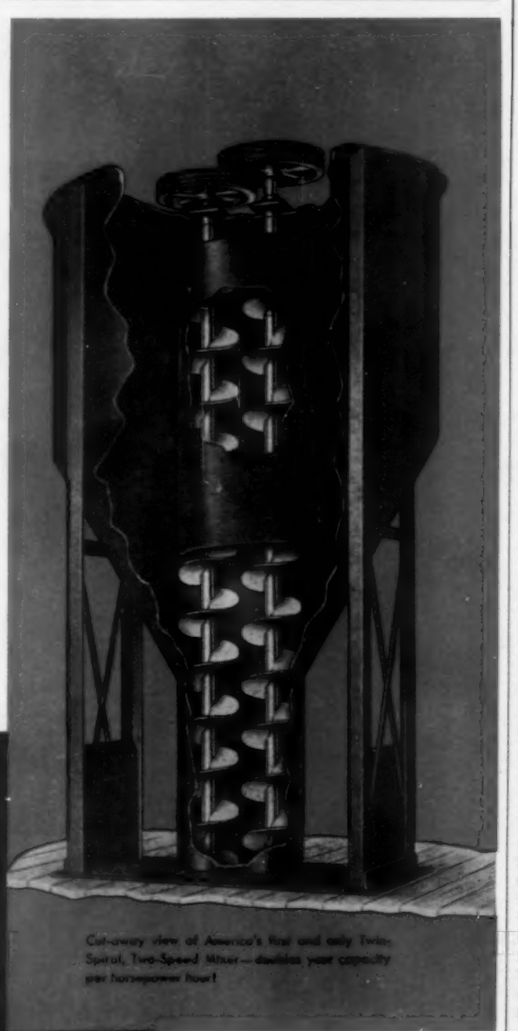

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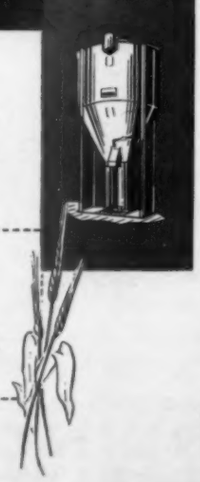

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JOE BROOKS

BY AL P. NELSON

Another Business Idea

It was a rainy spring day and trade was light. About a half hour before closing time, Rusty Hagen, the brown-eyed runtish bookkeeper, looked up from his desk.

"Joe," he said. "I've just discovered something."

"What?"

Rusty chuckled. "I've discovered that we are practically doing the bookkeeping for a lot of our customers."

Joe laid his pen on his desk and leaned back in his swivel chair. "Just what do you mean?"

Rusty grinned. "Well, all you fellows who contact our customers have told them that between Jan. 1 and income tax time they can get a record of all purchases they made here the previous year."

"Sure," Joe said, "and it's a good policy, isn't it? That gives farmers more confidence in us. And when they come here for that merchandise list, they might buy something. And they need that record when making out their income tax list."

"That's right," Rusty said. "I think it's a good idea, too. We even break down the merchandise purchased list for each farmer into feed, fertilizer, twine, seeds, etc."

Joe nodded. "I know it's a lot of work, but we have to do it."

"I'm not kicking," Rusty said. "I'm thinking. Then you and the others bring in a customer's feed list on a sheet of paper, throw a slip down with his feeding record and ask me to work up a good case history we can publish in the paper."

"That's right, Rusty," Joe said patiently. "More work for you. But those feeding records help us to sell more feed. The facts give customers something to think about. What are you hinting at, Rusty? Do you want a raise?"

"No, I wasn't hinting at it," Rusty said, "but since you mention it, I wouldn't kick if you gave me one. After all, I'm wearing out more pencils every week than I used to. The feed business is getting complicated. Our automation in this office is swell, but there's still considerable pencil figuring."

"Okay," laughed Joe. "Tell me in the morning how much raise you expect and I'll think it over. If you tell me now I won't be able to sleep tonight."

Complete Record Keeping

Rusty grinned. "Joe, do you realize that we now get so many figures from some of our customers on feeding records, that we ought to go one step farther and offer to do all their bookkeeping for them on special feeding projects?"

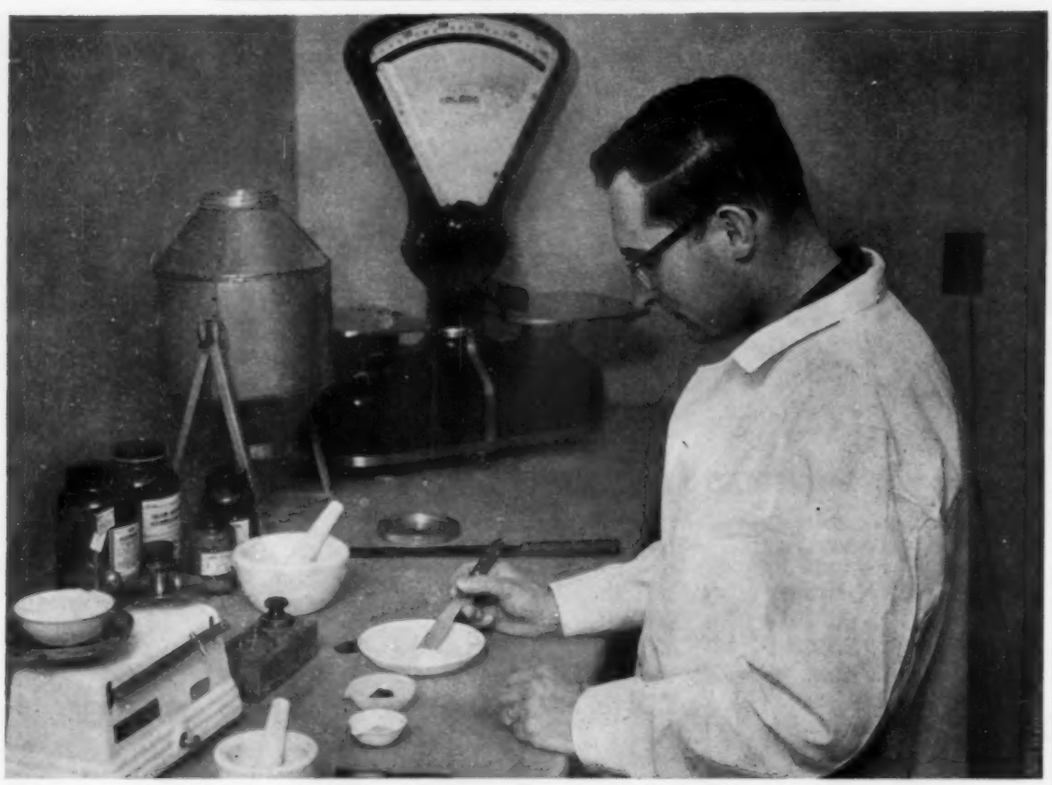
Joe blinked hard. "Now listen, Rusty, I have always respected your judgment, but this is going too far. What in the world do we want to stick our necks out for and offer to do free bookkeeping?"

Rusty chuckled. He held up a sheet of paper. "Here's Pete Richert, our best egg producer. He's got 8,000 layers and he makes money. He does bookkeeping in a general way—he's not detailed. Most customers are that way."

"But we can't wet nurse these fellows, Rusty. We won't make any money if we do."

"All Richert's operation sheet needs now is the cost of his poultry house and equipment. We've got all the rest of the figures. If I had the

How this mixing process can make a



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This careful research program, from book shelf to feed room, takes time — more than 15 years already — but it has led to many important discoveries about the use of trace minerals in feed — discoveries that make the big difference in Lime Crest Trace Mineral Pre-Mixes. Unless you are absolutely sure about the mineral mixtures you now use, why not put this Lime Crest difference to work in your feed? At least, let us send you our latest folder and price list.

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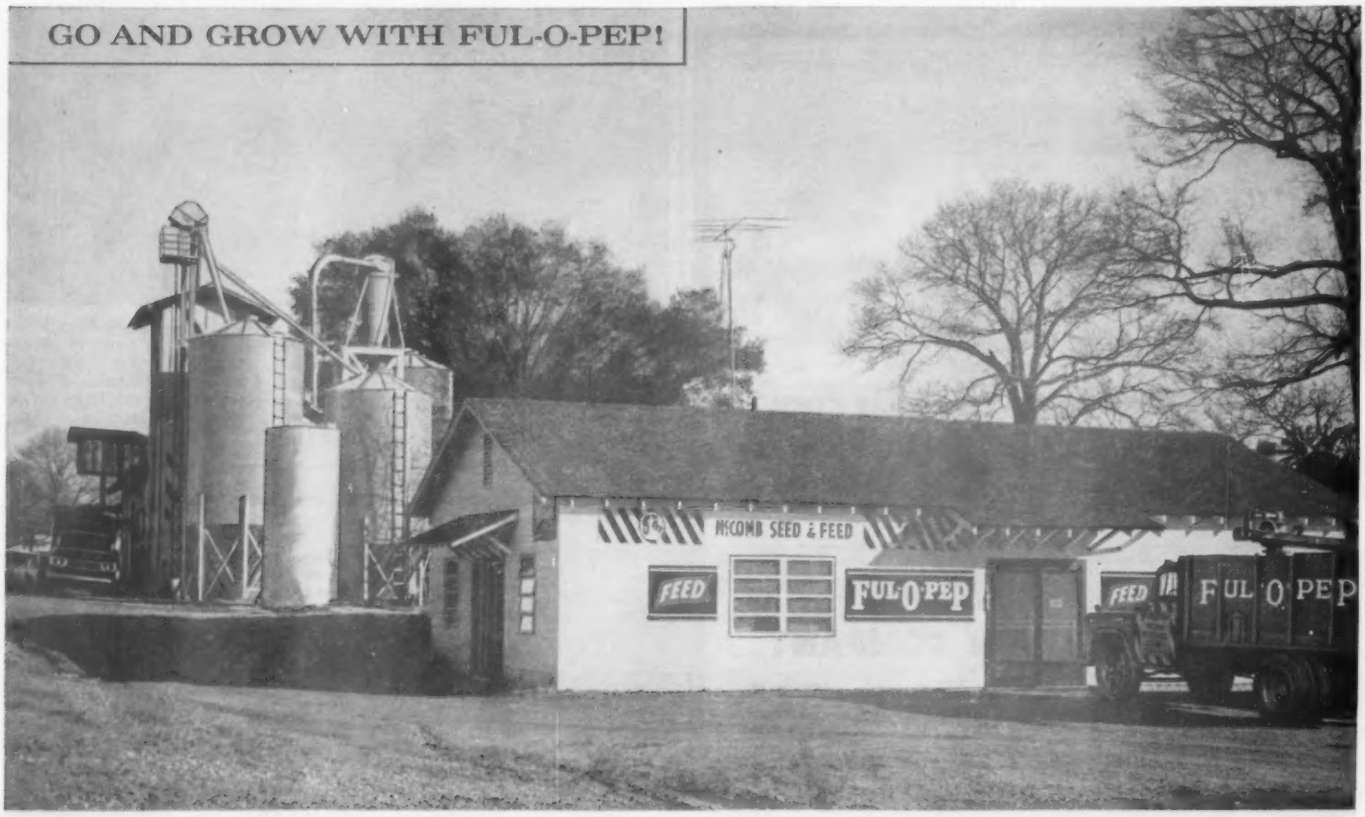

Experienced Ful-O-Pep engineers helped McComb Seed & Feed plan this efficient installation, with minimum outlay. Bin capacity includes 45 tons corn, 10 tons ground corn, 25 tons oats, 30 tons Ful-O-Pep Broiler Concentrate, and 30 tons Dairy Concentrate. The Quaker engineers suggested ground corn bins instead of more shelled corn bins, Mr. Boutwell said. Thus, the mill crew can grind corn at slack times, and level out their work-load.

"Tonnage climbed 50% in 2 years

...when we went bulk with Ful-O-Pep!"

—says G. A. Boutwell, McComb Seed & Feed, McComb, Miss.

"Our new bulk installation helps keep costs of feed down for our customers," says Mr. G. A. Boutwell, of McComb Seed & Feed, McComb, Miss., who put in bulk facilities 2 years ago. "Our tonnage has climbed up and up—roughly 50%—and it's still on the upgrade," smiles Mr. Boutwell. "The era of bulk feeding is already here," he believes, "and Quaker was the first in this area. The dealer with bags of feed in his store but no bulk service is at a disadvantage."

Mr. Boutwell has been associated with Ful-O-Pep 4 years, and Ful-O-Pep exclusively the last 2 years. "We're doing fine . . . and Quaker has helped my business grow," he said. "When a problem comes up, Quaker is helpful and understanding and sees your point of view."

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Trained Ful-O-Pep salesmen, who know modern feeding problems, work closely with McComb Seed & Feed. Here, Hollis Webb (left), Ful-O-Pep District Representative, consults with Mr. and Mrs. G. A. Boutwell on sales and service calls.

Customer service is very important in feed sales today, believes Mr. Boutwell. Hollis Webb of Ful-O-Pep, and Bud Flowers of McComb Seed & Feed, call on Bobby Adams, a customer, to talk over problems of feeding his herd of 70 dairy cows.

Consistently high conversions from feed made with Ful-O-Pep Broiler Concentrates keep customers more than happy, says Mr. Boutwell. Above, Bill Hughes, driver for McComb Seed & Feed, unloads bulk feed directly into broiler house.

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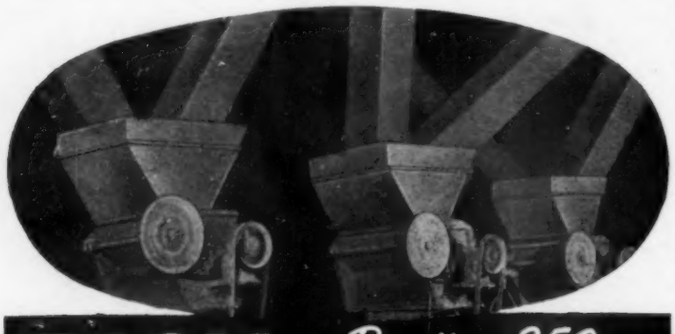
UTAH CONVENTION PHOTOS—Enjoying a milk break at the Utah Feed Manufacturers & Dealers Assn. convention in Salt Lake City recently (Feedstuffs, March 11) are, left to right in the first picture, Lawrence Morris; Bill Diamond, American Feed Manufacturers Assn., and Ray Hermansen. Results of the recent nutrition conference, held in conjunction with the Utah event, are being studied in the second photo by left to right: Leon Michaelsen, Ivan Carlson, Merrill Rushforth and Jay O. Anderson.



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cost of the house and equipment, I could depreciate it for him. Then I could tell him exactly what per cent of return he is getting annually on his investment. But I have to pin down what his total investment is."

Joe began to blink rapidly. "I'm beginning to get your point, Rusty," he said. "We've got enough figures from most of our best customers on their feed conversion rate and what it costs to produce a dozen eggs, but we aren't showing them what percentage of return they are getting annually on their total investment in poultry."

Another Selling Point

"Exactly," said Rusty. "You catch on fast. If we knew what that rate of return was, we'd have another selling point. It could range from 3-10% or more, depending on feed conversion and management factors."

Joe whistled. "Go on."

"I suggest," said Rusty, "that we have a special investment record. At the top would go the customer's name, and the total amount of his investment. On this sheet would go his egg income on a monthly basis and his monthly costs. Also there would be the yearly sales, yearly costs and yearly profit, and the rate of profit on the total investment."

"Whew," Joe said. "I get it. That's a record poultrymen would appreciate. And what a selling idea for us. This type of service is not being offered by anyone else."

"No, and before we would give such a service to a customer, he would have to know that we expect him to buy all his feeds from us."

"Right," said Joe. "That's the price they would pay for this service."

"Most farmers hate to bookkeep," Rusty explained, "but they do keep records of their costs and sales. We could do the rest. Next week you and the chamber of commerce are having this exploratory egg marketing meeting. If we pass the word around to our key poultry accounts that we can offer this bookkeeping service to them, this may encourage more of them to stay in the egg production field and perhaps enlarge it, and also back a regional egg marketing plan."

"It sure ties in together," Joe said. "But are you sure, Rusty, that you can handle this extra work?"

The bookkeeper nodded. "I've got most of the figures now and keep getting them every month. This is constructive bookkeeping and I like to do it. If I need help I'll yell."

Excuse to Call

"Well, we certainly will gather the figures for you," Joe said. "This will give Windy an excuse to call on our customers and perform a free service. I think he'll like it."

"Good," said Rusty, "the farmer can still keep his own books monthly and in his own way. But we will have better bookkeeping on his account and he can inspect our records any time he wishes."

"And eventually he'll adopt our system and become a better bookkeeper," Joe prophesied. "Then he'll do all his own bookwork, and relieve us of that task."

"Exactly," smiled Rusty. "And that's the kind of efficient customers we want, isn't it?"

Joe nodded. "Right. I'll think about that raise for you, Rusty. You deserve one—for this and many other excellent suggestions. See you in the morning."

FEED MILL AFFILIATION

DANVILLE, ILL. — The Swisher Feed division of the William Davies Co., Inc., Danville, has announced the franchise affiliation of five independent feed mills with its organization. The new Swisher Feed Service Mills are: Fulfs Farms Supply, Dixon, Ill.; H. W. Hayes Hatcheries, Vandalia, Ill.; G & W Feed Mill, Macedonia, Ill.; Englum Grain Co., Paris and Horace, Ill., and Rockport Grain Co., Rockport, Ind.

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Demonstrate Circular Feed Bunk in Kansas

SALINA, KANSAS—A new automatic circular bunk feeder was unveiled by the Wyatt Manufacturing Co., Salina, before 150 guests at a demonstration on the Ernest Kissick farm in Lincoln County recently.

The equipment, brain child of Homer Fine and Larry Mark, both staff members of the Nebraska Farmer publication, was shown to farm and trade paper editors, and a group of Wyatt dealers during the company's annual sales meeting. It will be marketed for the first time in 1961.

1-4½ Ratio

The bunk feeder is based on a "curved bunk" idea which adapts the old straight-line feeding principle to an arc of 50 ft. radius; 1 ft. of auger supplies feed for 4½ ft. of bunk.

The feed bunk can be constructed of wood, concrete, brick or cement block. It utilizes a curved formation up to 270°.

In operation, the feed is directed from bulk feed bins, silos, etc., to a hopper mounted on a swinging auger which pivots on a center post in the center of the feed bunk arrangement.

From the hopper, the feed moves through the 50-ft. auger to a flexible spouting and is fed freely, by gravity, through the spouting into the feed bunk as the auger slowly travels on its track back and forth over the bunk, evenly distributing the completely mixed feed.

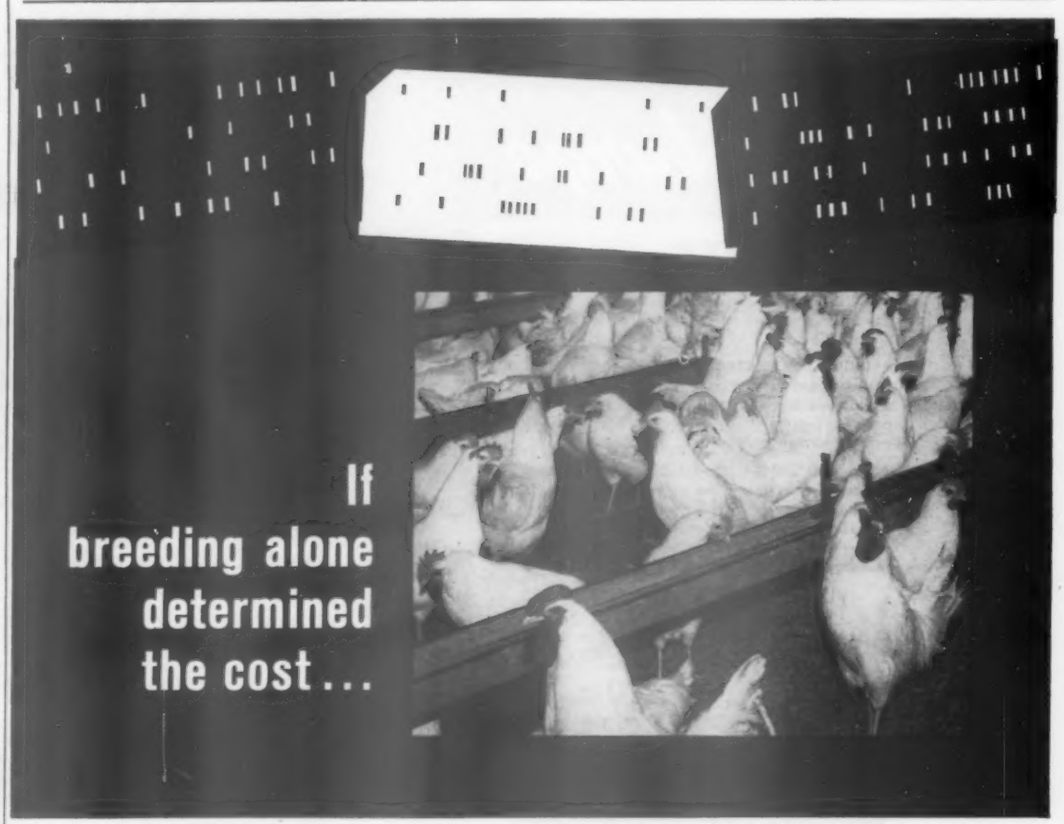
All moving parts of the circular bunk feeder are mounted approximately 7 ft. off the ground. The flexible spout, which drops the feed into the bunk, "travels the bunk area within reach of the cattle, but its pliability and slow speed rule out any chance of injury to cattle," the company said.

Utilizing a circular arrangement with a 50 ft. radius, the feed bunk provides 225 ft. of actual feeding space, which is sufficient to feed from 225 to over 450 cattle using both sides of the bunk, according to the manufacturer. A 75-ft. curved feed bunk in a 90° arc provides room to feed 75 to 150 head.

Its use is adaptable to cattle on different types of feed in the same pen, and fed from the same bunk. In this application, the auger traverses one section of the bunk until feeding is completed, then it can be switched to the other section and the type of feed changed to automatically supply the correct ration, it was explained.

CIRCULAR FEED BUNK—Here's a view of the new automatic circular feed bunk unveiled recently by Wyatt Manufacturing Co. of Salina, Kansas. Photo shows feed bunk in foreground including flexible spouting through which feed travels from auger to bunk. Note track at top of photo where auger travels back and forth along the bunk.

FEEDING OPERATION—The circular-type feed bunk operation shown here uses a 50 ft. swinging auger (center of photo) to supply feed for 225 ft. of bunk. The auger, mounted to a center post in the center of the feedlot, travels the circular feed bunk area on an elevated track. A flexible spout guides feed from the auger into the bunk.



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To develop commercial layers like these required a proven breeding program. This costs a lot of money. Breeding, however, is not the only cost in a pullet. There is always the cost of distribution which has nothing to do with increasing your profit. So we found a way to distribute more efficiently. We already maintained our own farms in every important egg-producing area with plenty of room for strain cross breeder flocks. With these we eliminated much of your hatcheryman's overhead. He saves and passes the saving along to you. The way today's Queen is performing you're still ahead at housing time and throughout the laying year. Does it make sense to pay more for your replacements when there's an Arbor Acres Queen hatcheryman nearby? Better call him right away.

Arbor Acres

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Oklahoman Asks at Feed Conference: 'What's a Customer Without Money?'

By FRED E. TUNKS
Feedstuffs Staff

STILLWATER, OKLA. — "What's a customer without money?"

A good question that tells in five words how important it is for the feed man to help his customers run a profitable operation. It was asked by Clifford Burton, extension dairyman, in the presence of feed industry representatives at last month's Oklahoma Feed Industry Conference and Workshop here on the campus of Oklahoma State University (Feedstuffs, March 18 and 25).

The feed man's job, as Mr. Burton sees it, should not end with the feeding aspects of a farm enterprise or, more specifically for the purposes of Mr. Burton's discussion, a dairy farm. "He should help the dairyman with over-all management," he remarked.

Feeding is important, but, as Mr. Burton noted, the broadly informed feed man can be of great value to the dairyman who needs answers about equipment, breeding, milk marketing and labor efficiency.

"Tremendous Investment"

A point stressed by Mr. Burton was the "tremendous investment" the dairyman has in equipment, building and stock. For the dairyman to be a successful and paying feed customer, he needs all the help he can get.

"If we were given the task of selecting the one factor in the dairy business that contributes most to keeping the dairyman's nose to the grindstone, low production per cow would stand out in first place like a sore thumb," Mr. Burton said.

FOOD FOR THOUGHT—Enjoying a banquet dinner served in conjunction with the March 10-11 Oklahoma Feed Industry Conference and Workshop are, from left: Dean Stauffacher, vice president and sales manager, Diamond V Mills, Inc., Cedar Rapids, Iowa; Tracy H. Barrett, Tracy H. Barrett Co., Springdale, Ark.; A. N. Lindquist, feed department, Clinton (Iowa) Corn Processing Co.; Tommy Thompson, Tommy Thompson Co., Ft. Worth, Texas, and Linn Brewer, Mayo Shell Corp., Houston, Texas.

"Many circumstances in the background contribute to the cause of low production such as poor feed, low inherited ability, harsh handling, lack of machinery and equipment, to name only a few."

What are the results of low producing cows? Mr. Burton listed these: (1) The producer realizes low or no income from his labor, (2) capital income for the producer is low, (3) the producer becomes a poor market for feed, equipment and other manufactured goods and (4) production of surplus milk—just for the exercise—comes back to haunt every individual connected with the dairy business.

Mr. Burton reported that there are indications of Oklahoma dairymen making greater use of complete feeds—grain, hay and commercial supplements together in one package. Also he noted a shift toward feeding more grain and less hay because currently grain costs no more or less than hay and "a cow is able to utilize whichever is cheapest."

Swine Rations

Dr. J. C. Hillier, a swine specialist at Oklahoma State, noted that a combination of milo and soybean oil meal plus constituents such as alfalfa, mineral supplement and B complex vitamins appears to be more economical for Oklahoma swine feeding than other 16% protein rations combining corn and soybean meal or milo and cottonseed meal.

Milo has its shortcomings, however, because of some amino acid deficiencies. "The major problem in formulating swine rations is in the area of protein," Dr. Hillier said.

"The direction in the foreseeable future of swine feeding is toward a carcass with as high a percentage of lean as possible," Dr. Hillier said. "It is very important that feeders use the most efficient kind of animal to

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An informed outlook is the best insurance against the "look out!" warnings that usually come too late. That is one of the reasons for the popularity of Feedstuffs' Outlook Issue. That's the reason it has been necessary to reprint the Outlook features in the Dec. 31, 1960, issue.

This 20-page reprint includes 11 articles on business prospects and important trends in various areas of the feed industry, with emphasis on marketing at a profit. Included in the report are exclusive articles by Robert D. Emmons of Wirthmore Feeds, Inc.; Earl P. Mitchell of Alabama Flour Mills; E. C. Fuller of Nutrena Mills, Inc.; G. A. Ensminger of Albers Milling Co., and R. H. Bauman and J. O. Dunbar of the agricultural economics staff at Purdue University.

You'll also find that valuable information from Feedstuffs' survey of feed manufacturers is presented in detail in the report.

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BETWEEN SESSIONS—Cooperation between the feed industry in Oklahoma and researchers at the state university in Stillwater is demonstrated here as Bob Calvert (center), nutritionist for Evergreen Mills, Inc., Ada, Okla., converses with Dr. Robert J. Sirny (left), department of biochemistry, and Dr. Allen Tillman, department of animal husbandry, during a break at the recent Oklahoma Feed Industry Conference and Workshop.

convert high quality, correctly formulated feed into high quality lean pork."

Industry's Importance

Lloyd Larson, executive vice president, Midwest Feed Manufacturers Assn., remarked while introducing a showing of a sound tape-film slide presentation, "Opportunity Knocks—at Home Plate," "I wonder if the feed industry has really done a good job of selling itself and its vital part in the nation's economy. We must be concerned more with the end products of animal agriculture. When have we told the positive side of our story?"

In conjunction with the film, which tells of career opportunities in agriculture, Dr. J. W. West, head of Oklahoma State's poultry department, suggested that feed and allied firms might want to consider the value and practicability of setting up career interviews with job-hunting college graduates at feed industry conventions.

TRIP ABROAD—Mr. and Mrs. Frank Frazier are shown boarding the trans-Atlantic super jet which launched them on the first leg of a six-week trip to the International Agricultural Exhibition in Cairo, Egypt, and countries in western Europe. Mr. Frazier, executive vice president, National Broiler Council, will be the poultry consultant to the U.S. Department of Agriculture at the exhibition. On April 7, Mr. and Mrs. Frazier will begin a 17-day tour through Greece, Italy, Switzerland, West Germany, the Netherlands and Great Britain. Mr. Frazier will be studying the marketing techniques used in these countries, which are major export markets for U.S. broilers.

Vaccine for Fowl Cholera Licensed

CLEMSON, S.C.—A new fast-acting fowl cholera medication is expected to hit the market within the next few months, it was revealed at the fifth annual Poultry Health and Management Short Course here.

Developed by Dr. E. C. Mora, Auburn University, it has been licensed by Dorn & Mitchell, a subsidiary of Sterwin Chemicals, Inc. The vaccine was developed in 1959 and has had extensive trials in the Southeast, Pennsylvania and New England, Dr. Mora said, with "highly satisfactory" results in preventing and halting outbreaks of fowl cholera.

The revelation of the new product came in Dr. Mora's talk on "Fowl Cholera—Diagnosis and Control." He has been devoting most of his time to poultry research in his present position at Auburn. Previously he did research in the human medical field. He came to Auburn from Kansas State University where he received a Ph.D. degree.

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Classified advertisements received by Tuesday each week will be inserted for the issue of the following Saturday. Rates: 25¢ per word; minimum charge $3.75. Situations wanted, 20¢ a word; $3.00 minimum. In figuring cost of your classified ad . . . each word, abbreviation, telephone exchange and number, set of initials, or group of figures counts as a word. To the number of words in your want ad itself add six (6) words for your name and address or name and address of your firm. This applies for both direct-reply ads and for blind ads containing a box number. If an ad is keyed, care of Feedstuffs, 25¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $14.00 per column inch. No discount on ads ordered for more than one insertion.
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FOR SALE — COMPLETE HEIL DEHYDRATING plant, 8D-8x25 oil or gas fired. Napoleon Alfalfa Mills, Inc., Napoleon, Ohio.

1955 DAFFIN FEEDMOBILE WITH GMC diesel mounted on 1955 Chevrolet truck with corn sheller and air unloader. Price $8,500. Good condition. Address Ad No. 6767, Feedstuffs, Minneapolis 40, Minn.

MOBILE MILLS, NEW, USED AND FACTORY rebuilts. Complete with grinder, mixer, diesel, molasses. Financing available. Iowa Portable Mill Co., Oelwein, Iowa.

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WE HAVE FOR SALE A SELECTION OF used mixers, various sizes, taken in trade on new Rollo-Mixers. Also, new Rollo-Mixers of all sizes. Contact: Geo. Curran, 1203 Second St., Menomonie, Wis., Phone CEdar 5-3573 or Chas. Phillips, Box 65, Downsville, Wis., Phone NOrth 4-3186

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BULK DELIVERY TRUCK—PAK-MASTER bag and bulk unit, mounted on 1958 Ford F700. Unit has had excellent care and is in good working condition. Priced to sell. Would consider selling feed-box separately. Write Box 797, West Fargo, N. D., or call Butler (Fargo) 2-3225.

FOR SALE—ONE KING MOBILE FEED unit on Ford chassis with two ½ ton mixers, corn sheller, hammermill, molasses tank and blender, bulk auger type unloading equipment. Will sacrifice at less than half the original cost as our agreed to area is being covered by one unit only. One 2,000 lb. hopper suspension pipe lower type Fairbanks scale. One 600 lb. hopper, ceiling or floor supported type Wolf scale. One Richardson automatic 1 bu. grain scale. Hayden Flour Mills, Inc., Tecumseh, Mich.

MACHINERY WANTED

WANTED TO BUY—USED 50 H.P. CALIfornia pellet mill. Used 20 to 30 H.P. gas fired boiler. Farm Service Supply Co., Florence, Ala.

WANTED TO BUY — RICHARDSON Scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

BUSINESS OPPORTUNITIES

TO BUY—SMALL FEED MILL ON CONtract. Desire two-year working arrangement with present owner. Midwest location. Address Ad No. 6755, Feedstuffs, Minneapolis 40, Minn.

FOR SALE — FEED MANUFACTURING plant equipped with pellet mill, molasses mixer, etc. Located in Sioux City, Iowa. Will sell with or without business. Very attractive terms. P.O. Box 1251, Sioux City, Iowa.

FOR SALE—FEED AND GRAIN ELEVAtor located northwestern Ohio; 25,000 bu. storage; practically new equipment; good railroad siding. Ideally situated middle of heavy feeding territory. Excellent location for large commercial feed mill desiring retail outlet. Address Ad No. 6741, Feedstuffs, Minneapolis 40, Minn.

FOR SALE — IMMEDIATE POSSESSION, grain elevator, up to 175,000 bu. capacity, on Nickel Plate Railroad, Toledo, Ohio. Equipment includes Fairbanks hopper scale (carlot), Fairbanks truck scale (200,000 lb.), nearly new high capacity grain cleaner, smaller precision grain-seed cleaner and complete conveyor system from tanks to mill, mill to tanks. All in good condition and ready to go to work. These facilities are excellent for conditioning, blending, storage operation. Milling and storing in transit privileges available. Also cheap rail transfer to marine loading. Insurance and tax rates are favorable. This property is priced to sell. Will finance for right party. O & M Seed Co., P.O. Box 68, Yellow Springs, Ohio.

SITUATIONS WANTED

NUTRITIONIST, EXPERIENCED Ph. D., seeks broad responsibility with feed, food or pharmaceutical firm. Address Ad No. 6734, Feedstuffs, Minneapolis 40, Minn.

EXPERIENCED FEED, FEED ADDITIVE salesman, excellent formulation and nutrition knowledge, 36 years, family man, wants to locate Denver area. Address Ad No. 6763, Feedstuffs, Minneapolis 40, Minn.

MANAGEMENT-CHEMICAL ENGINEER — Experienced plant manager, assistant plant manager, plant production superintendent in feeds, grain, oils, fats, vitamins, dry-wet milling, feed, chemicals. Address Ad No. 6757, Feedstuffs, Minneapolis 40, Minn.

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SALESMAN WITH A BACKGROUND IN textile and multiwall bags to travel Minnesota, North Dakota and western Wisconsin. Please write Ad No. 6769, Feedstuffs, Minneapolis 40, Minn.

POULTRY NUTRITIONIST WITH Ph.D. degree and experience in feed formulation, management and production of poultry. Address Ad No. 6731, Feedstuffs, Minneapolis 40, Minn.

FARM MANAGER — LARGE POULTRY farm needs man with breeder flock experience. Give full particulars first letter. Confidential. Address Ad No. 6711, Feedstuffs, Minneapolis 40, Minn.

SALESMAN TO SELL INGREDIENTS TO feed trade on commission basis in Ohio, Indiana and Kentucky. Could add to present work. Give personal details and background. Address Ad No. 6753, Feedstuffs, Minneapolis 40, Minn.

MOBILE MILL SALESMEN WANTED — Remunerative territories now open. Experienced men seeking permanent affiliation with experienced aggressive manufacturing concern send resumé to arrange interview. Address Ad No. 6752, Feedstuffs, Minneapolis 40, Minn.

YOUNG MAN FOR POSITION OF ADMINistrative assistant in egg division. Farm background and technical training in poultry husbandry helpful. Of paramount importance, must be personable and have sales ability. Give age, experience and salary expected. Inter-County Farmers Cooperative Assn., Inc., Woodridge, New York.

PRODUCTION MANAGER WITH EXPERIence in formula feed production. Good opportunity for right man. Position involves responsibility for feed production operation, quality control, personnel, warehousing, mechanical problems and trucks. Midwest location. Give complete resumé and references. Write to Ad No. 6744, Feedstuffs, Minneapolis 40, Minn.

SALES MANAGER FOR PROGRESSIVE firm specializing in vitamins for feed industry. Must have good writing ability, knowledge of feed field, especially poultry, some technical background in chemistry or nutrition, must be willing to travel extensively and relocate in New York City area. Send in confidence complete data and salary requirement. Address Ad No. 6670, Feedstuffs, Minneapolis 40, Minn.

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Sprout-Waldron Names 2 Sales Representatives

MUNCY, PA.—Sprout, Waldron & Co., Inc., has announced the appointment of two company representatives to serve the firm in the South and Southwest.

E. L. (Red) Brashear has been named a district representative for New Mexico, western Oklahoma and western Texas. J. W. Ewoldt of Ft. Worth, Texas, has been appointed to represent Sprout-Waldron in eastern Texas, eastern Oklahoma and sections of Arkansas and Louisiana.

For the past three years, Mr. Brashear has been with the Helm Manufacturing Co., whose line of pelleting and feed mill equipment was recently acquired by Sprout-Waldron.

Mr. Ewoldt was also with the Helm Manufacturing Co. before joining Sprout-Waldron.

Tax on Feed Asked

RALEIGH, N.C.—North Carolina's sales tax would be extended to farm commodities including feed under a proposal offered by Gov. Terry Sanford.

The increased revenues would be used to finance a school improvement program, according to the governor.

A number of items not now subject to sales tax would also be added. These include: seed, fertilizer, insecticides and food items. The tax would run from 1-3%.

Directors of the North Carolina Farm Bureau have reportedly endorsed most of the tax proposals except the levies on feeds, seeds, fertilizers, insecticides and farm machinery.

Wirthmore Announces Package Feed Plan

WALTHAM, MASS. — Wirthmore Feeds here has announced a package poultry feeding plan with a simplified starting, growing and laying program which the company says is designed to make possible as much as $1 extra income per bird.

Features of the "package plan" are use of starter feed for only six weeks, followed by growing ration for the entire growing period, the firm says.

Vaccination for coccidiosis and use of controlled feeding are also recommended.

OREGON CONVENTION—Here are some photos taken at the recent convention of the Oregon Feed & Seed Dealers Assn. in Portland. From left to right in the first picture are Ray Sticka, Mill Mutuals, Salem; Sewell Erskine, Albert Dickinson Co., Sunnyside, Wash., and Merrill Sather, Pacific Northwest Grain Dealers Assn., Spokane, Wash.

The second photo shows Harold Davis, Buchanan-Cellers Grain, McMinnville, and Frank Fekete, Security Seed, San Joaquin, Cal.

Left to right in the third picture are Phil Lenox and Gil Cook, Bemis Bro. Bag Co., Vancouver, Wash.; George Eaton, Louis Dreyfus Corp., Portland, and Wayne Olson, E. F. Burlingham, Forest Grove.

The last photo shows Gene Kokko, Wilbur-Ellis Co., Portland, and J. L. Jones, Norman Jensen, Inc., Blaine, Wash.

FEEDING RESEARCH—Shown here is one of the cattle feeding research facilities and the site for the morning program of the Indiana Cattle Feeders Day to be held at Purdue University April 28. In the picture are cattle on vitamin A research which are penned ready for a regular 28 day weigh-in.

Indiana Feeders Day Program Announced

LAFAYETTE, IND.—Levels of vitamin A for fattening beef cattle and the value of haylage in a cattle feeding program will be included in the topics to be discussed at the annual Indiana Cattle Feeders Day at Purdue University April 28.

The program will start with tours of the research at the Purdue Farm Center from 9 to 10 a.m. (CDT). Reports of results from eight different cattle feeding research trials will be reported, starting at 10.

Research results to be reported include the following:

1. How much vitamin A is "enough"? One trial has been completed and another is in progress in which graded levels of supplemental vitamin A are being fed to fattening calves which are on a full feed of corn balanced with soybean oil meal and minerals. In addition, some of the rations are fortified with 10% of suncured alfalfa meal.

2. How does "haylage" compare with hay or grass silage in a fattening ration? Four methods of storing an alfalfa crop cut from the same field on the same day are being compared as the sole source of roughage in fattening ration for beef calves.

3. How does "haylage" compare with hay or glass silage in a growing ration? Four products are being fed to calves with only a very small amount of concentrate in order to compare the four products in a growing ration for calves that will be turned to pasture during the summer.

4. Can pelleting pay for fattening beef cattle? In a pelleting trial, one group of cattle was fed a fattening ration, in the loose form, of a full feed of ground shelled corn, 2 lb. Supplement A and 20% of the ration as long hay. A second group was fed the same type of ration except that all the ingredients of their ration were ground and pelleted into ¼ in. pellets. A third and fourth group were fed pelleted rations in which 40% and 60% of hay, respectively, were incorporated into their pellets.

5. How much corn should be fed with corn silage in a fattening ration? Because of less capacity for calves, the question is: What level of corn should be fed for maximum gain and least cost? Four lots of calves are being used in this research in which corn silage is the only roughage being fed and 2 lb. of Supplement A per day is the protein supplement fed in all lots.

6. What are some of the supplemental nutritional needs of fattening cattle fed a high urea supplement? Purdue reports it has started what may perhaps be a long time research project designed to learn what one needs to add to a high urea 64% crude protein supplement in order to make it nutritionally equivalent to the natural protein concentrate. In this year's research, additions of two levels of lysine, or two levels of methionine analog, or trace minerals are being studied.

7. Is there anything new on hormones? In research in progress with fattening steers, two oral levels of dienestrol diacetate and two oral levels of Smilagenin are being compared with a control lot fed no hormonal materials and with a lot fed 10 mg. of diethylstilbestrol per head daily.

Other topics on the feeders day program will include: "Producing Feeder Calves," R. C. Peterson, Southern Indiana Forage Farm, Purdue, and "The Future of Our Industry," Kenneth Monfort, vice president, Monfort Feedlots, Inc., Greeley, Colo.

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Only $295

Universal Hoist Co. Plans 'Peopleveyor'

CEDAR FALLS, IOWA — A "peopleveyor" from downtown Chicago to Cedar Falls and back will be used by Universal Hoist Co. during the American Feed Manufacturers Assn. convention and National Feed Industry Show in Chicago.

Persons interested in visiting Universal's Cedar Falls plant will leave Meigs Field Airport in downtown Chicago at 8 a.m. each day. The trip will take approximately 1½ hours each way in Universal's company plane.

A four hour plant tour and a luncheon are planned on the Cedar Falls end of the trip and the visitors will be returned to the convention in Chicago by 5 p.m.

Reservations for the trip can be made by visiting the Universal Hoist Co. booth at the AFMA convention or by making previous arrangements, officials said.

Credit Group Advises Thorough Checking Of New Accounts

MINNEAPOLIS — When credit is granted with little or no investigation of the applicant, there are bound to be many slow-pay feed customers, a high collection cost and a high percentage of loss from bad accounts, warns the feed and seed division of the Credit & Financial Management Assn., Minneapolis.

Poor-pay customers appear to have a way of finding out via the grapevine which dealers are lax in granting credit in their eagerness to make sales or are careless in checking whether each new customer qualifies for credit, the feed and seed credit men observe.

There are two common ways of opening a new charge account, the association notes. One way is to "put on the books" anyone with an honest face. This method sooner or later results in problems. Another way, a better one, involves making out a credit information card on which are listed facts essential to sound granting of credit.

"Ask Now, Not Later"

"Don't be afraid to ask customers about information you need to know to properly operate your business," says the credit group. "It's better to do the asking when the account is being opened rather than later on. We find more and more that the accounts giving dealers trouble in their collections are those on whom they don't have a credit information card. This seems to indicate that when the customer was first sold merchandise on credit the dealer didn't find out the information needed to establish a sound credit account.

"Of utmost importance is the matter of obtaining references of businesses with whom the customer has dealt previously on a credit basis. Check out those references and also one or two other businesses where the credit applicant might possibly have had a less-than-good credit record. Obtain bank and personal references. A poor bank record requires extreme caution in granting credit. A good bank record often requires further investigation, particularly through a chattel abstract and possibly a financial statement.

Even for Small Amount

"Often we are advised by a dealer that there is no need for a credit information card because the first sale only involved a transaction of a few dollars which was made by one of the salesmen. Further, the farm owner has since been in the store to pay the bill. This is fine thus far but what about the next time when the same farmer comes in to make a purchase of a few hundred dollars worth of products and the same salesman handles the transaction? Does the prompt payment of a small bill justify a $300 credit sale? The proper procedure is to make the investigation at the time of the very first sale even if it is for a small amount. At this time a maximum limit should be established and marked on the ledger sheet so that you or any employee will know how far to go on credit. The limits should be reviewed regularly.

"Credit investigations should apply to credit sales to local or neighboring business firms, too. Don't assume that all commercial accounts are sound. Many are problem accounts, difficult if not impossible to collect. If there is any doubt, require references and ask any questions necessary to decide how much credit should be extended.

"An account started right has a much better chance of ending right. Keep those complete and accurate credit information cards up-to-date," concludes the credit men's group.

SHORTWAVE RADIO AIDS CHICK RESCUE

CARTERSVILLE, GA.—The use of two-way shortwave radio in trucks and cars paid dividends recently when a small tornado struck in the Cartersville area destroying a broiler house containing 6,000 three-week-old chicks.

When the storm struck the house of Wiley Sullins, his wife called Georgia Chicks, Inc., for whom the birds were being grown under contract.

At company headquarters, a radio operator summoned several of the company's trucks to the scene of the wrecked house. Within 30 minutes workers were on the spot gathering up the birds and putting them in another house that had not been damaged.

Company officials said the radio helped save the chicks because a heavy rain came about an hour after the storm. The birds would have been drowned had they not been given prompt shelter.

Another broiler house was also destroyed in the storm, including 10,000 chicks. This was a house operated by Jack Jenkins, a contract grower for Cotton Producers Assn.

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DISTILLERS CONFERENCE SPEAKERS—Pictured here are the speakers who spoke at the recent 16th Distillers Feed Conference meeting held at the Sheraton-Gibson Hotel in Cincinnati, Ohio. Sitting left to right are: Dr. Lawrence E. Carpenter, executive director, Cincinnati; Dr. S. L. Adams, Joseph E. Seagram & Sons, newly-elected president of the Distillers Feed Research Council; C. D. McDermott, Grain Processing Corp., past president of the council; Dr. Philip J. Schaible, Michigan State University; Dr. M. C. Nesheim, Cornell University, and Dr. J. R. Couch, Texas A&M College. Standing left to right are: Dr. W. M. Beeson, Purdue University; Dr. N. L. Jacobson, Iowa State University; Dr. Harold Wallace, University of Florida; Dr. E. I. Robertson, John W. Eshelman & Sons; Dr. E. L. Stephenson, University of Arkansas; Dr. E. C. Naber, Ohio State University; Dr. T. D. Runnels, University of Delaware, and Dr. J. H. Conrad, Purdue University.

Says Grain Program Draws 'Undue Alarm'

DENVER—Dr. James T. Ralph, assistant secretary of agriculture, told some 400 farmers and U.S. Department of Agriculture staff members from 14 western states that grain and feed dealers expressing dissatisfaction with the new emergency support program for feed grains are "unduly alarmed."

He said that the program will be one "to reward those who cooperate and fails to reward those who don't."

INGREDIENTS

(Continued from page 1)

level of about $1 bu. He told the Senate Agriculture Committee that this policy would apply only through Oct. 1, the end of the current marketing year.

USDA officials have brought some comfort to the markets by saying USDA will not upset normal marketing by dumping corn between now and the new crop harvest.

But the feed trade still is a bit skeptical. Said the American Feed Manufacturers Assn. in a bulletin issued March 29:

"The market price of corn is likely to decrease between now and harvest time. The administration is likely to market substantial quantities of corn to depress prices to encourage producers to participate in the program. (Government officials have said they thought if the price for corn is reduced to $1 bu., farmers would comply with the new feed grain legislation and reduce new production.)

"In addition to the selling of surplus grain to pay participating farmers, USDA can sell 'out-of-condition' surplus grain at market prices. This provides an additional opportunity to decrease market prices when desired.

"Future prices of feed grains are likely to depend heavily on Washington decision-makers. It will be increasingly difficult to make economic price forecasts. Prices will not necessarily follow the usual seasonal patterns with lowest prices at harvest.

"There will be no shortage of feed grains within the foreseeable future."

This week's sharp break in corn prices, about 6½¢ bu. on a national average from March 21 to March 28, affected the ingredient market almost immediately. Cheaper corn automatically brought the price of many ingredients down. Feed men were prone to hold off anything more than hand-to-mouth buying of ingredients because of an expected decline in formula feed demand. Manufacturers and dealers in the Midwest this week were full of talk about how cheaper corn would encourage the farmer to feed more corn and buy less formula feed.

Soybean meal prices advanced sharply at most marketing points because of higher soybean prices, reports that production would be curtailed and because of the tense situation in Laos. The balance of ingredients, however, was generally weaker, a definite reflection of the softness in feed grains and the rather slow movement of formula feeds.

It was reported that feed manufacturers found the new high price for soybean meal disturbing since it brought the cost of their finished feed up sharply—and some were concerned that feeders may not be willing to take on feed at a higher price (see soybean meal report from Chicago on page 8).

Millfeed demand was very slow, and although production was down from the week before, prices worked lower.

The linseed meal market was very sluggish and outlets were limited. Meat meal prices were slightly easier, while tankage showed ever greater weakness.

Feeds: Average Bulk Prices and Index of Weighted Prices*
(Dollars per ton)

	Mar. 28, 1961	Mar. 21, 1961	Change from previous week
OILSEED MEALS			
Prices at prin. mkts:			
Soybean meal	75.25	71.65	+3.60
Cottonseed meal	56.65	57.15	— .50
Linseed meal	63.85	64.35	— .50
Copra cake or meal	57.50	57.50	...
Peanut meal	53.25	53.50	— .25
Index	90.2	87.4	+2.8
ANIMAL PROTEIN FEEDS			
Prices at prin. mkts:			
Meat meal	86.15	87.60	—1.45
Tankage	86.10	87.90	—1.80
Fish meal	103.50	103.50	...
Index	77.4	78.5	—1.1
GRAIN HIGH-PROTEIN FEEDS			
Prices at prin. mkts:			
Gluten feed and meal	49.75	49.75	...
Dist. dried grains	57.20	64.20	—7.00
Brewers dried grains	45.00	47.00	—2.00
Index	78.6	81.1	—2.5
WHEAT MILLFEEDS			
Prices at prin. mkts:			
Bran	39.85	40.90	—1.05
Midds. and shorts	39.50	40.80	—1.30
Index	71.7	73.8	—2.1
OTHER MILLFEEDS:			
Prices at prin. mkts:			
Hominy feed	39.80	41.45	—1.65
Rice bran	31.00	31.50	— .50
Index	61.9	64.2	—2.3
ALFALFA MEAL			
Prices at prin. mkts.	51.15	51.45	— .30
Index	98.5	99.0	— .5
MOLASSES, FEEDING			
Prices at prin. mkts.	26.88	26.88	...
Index	80.0	80.0	...
ALL FEEDSTUFFS			
Index	82.7	82.0	+ .7
FEED GRAINS			
Prices at prin. mkts:			
Corn	36.90	38.70	—1.80
Oats	42.20	42.60	— .40
Barley	41.60	41.50	+ .10
Grain sorghums	38.00	38.10	— .10
Index	60.4	62.7	—2.3

*Base period of index is 1947-49.
Source: USDA.

CORN

(Continued from page 1)

ficials who expressed concern over the reported uncertainty of the grain trade which was represented in strength here last week at the annual convention of the Grain & Feed Dealers National Assn.

Top Officials in Field

The absence of top USDA officials at that big annual session was most unfortunate. Trade attendants at the convention left here without any adequate expression of the attitude of USDA in regard to sales of corn under the feed grain bill. It can be stated authoritatively that top USDA staffers did not duck this occasion to explain their program. It so happened that the GFDNA convention coincided with the passage of the feed grain bill. Secretary Freeman, Assistant Secretary James T. Ralph and Under Secretary Charles S. Murphy took to the road to sell the idea to the feed grain farm areas.

There is no doubt of the urgency of USDA to put over the Willard Cochrane ideas on acreage controls and higher price supports as a compensating factor—plus the tail gate appeal of the secretary himself in the Corn Belt, with government checks in one hand and a big poster on the side of his truck saying figuratively in effect, "Sign-up if you want to get these checks."

It is an old, old story. Both parties have used it. Former Secretary Benson did it when he offered non-compliers the $1.06 bu. support.

Price Break

Reliable information from USDA came too late to halt the grave concern of the grain and feed industry over corn prices, which broke badly this week—a break that a more prudent trader might criticize.

The support price for corn under the feed grain bill of $1.20 bu. should reflect $1 corn in areas contributory to Chicago.

However, in the absence of top officials to explain policy, most attendants at the GFDNA convention went home in consternation and unwilling to forecast where the markets might go. The threat of this administration—or for that matter, any USDA administration with broad powers in its hands—can do little less than throw the fear of God into the markets.

That appears to have occurred this week as corn futures prices took a nose dive. Based on hog prices, corn is not that cheap, and USDA is not going to dump corn into the market to depress the price of corn for the producers of 1960 crop corn who still hold cash corn.

Feedstuffs was reliably informed without reservation that any sales of Commodity Credit Corp. stocks of corn will not be made in any volume which would mean less for old 1960 corn than the growers may reasonably expect on the national average price support basis of $1.06 bu. for that crop.

That statement, it is sure, was made in all sincerity, but the market prices since that report do not seem to confirm it. But there it is, and there is no reason to suspect that USDA wants to bust the market wide open.

This threat of sales of USDA corn to compensate CCC for such acreage cutbacks as may occur will not be clearly seen prior to April 15, and then it will not be known until the July 10 crop report on acreage.

There are some observers here who are betting that compliance with the cutback in feed grain acreage will be less than 40%. It is probable, however, that the grain sorghum producers, particularly in Texas, will ride this new program to a farethee-well.

Uncertainty Reflected

The point of this story is somewhat delayed. The break in the nearby corn market naturally reflects uncertainty of the processing and feed industries which normally may carry in large operations as much as a four-week supply of carbohydrates for their operations. In view of the absence of an official top level statement of sales policy, most feed industry buyers of carbohydrates must be unwilling to buy other than hand-to-mouth, but at the same time this imposes an uncertain cost factor in their operations.

This nearby corn market price break is like the spring equinox. It had to occur. Uncertainty—absence of official information—is not new to this administration alone.

The old crop corn is not as cheap as it is now selling. In fact, farmers have every reason to hold corn on their farms to feed to swine at reasonably good prices.

Furthermore, why sell at low prices now when the Kennedy administration is moving heaven and earth to provide higher immediate farm income so that it can build up a comfortable environment wherein they can capture the farm belt Congressional elections in 1962?

Could Look Like Prophet

Secretary Freeman told Congress that the cost of the new higher price support for corn would be compensated by a sell-back of grain into the market.

It is not impossible that Secretary Freeman may forget that pledge if the corn market sinks after the new crop harvest. A drouth year this year could make Secretary Freeman look like a prophet rather than a Minnesota political discard who is now gaining a living in the official cabinet.

The current USDA gang is somewhat reminiscent of an eager young man who has acquired an insurance agency contract. They are vigorously firing all Agricultural Stabilization and Conservation committeemen with GOP affiliations and appointing eager young Democrats to take off into the field to urge farmers to sign up in the feed grain acreage controls program—aided of course by the Barnum and Bailey performance of the secretary and his top staff men.

How much they can accomplish is problematical.

It is this reporter's guess that not more than 25% of corn farmers will sign up—while the grain sorghum boys may swamp the sign-up program.

But one must not expect that USDA will now have to move grain to break the market. It is broken. Confidence is lost. Big buyers are unlikely to accumulate inventory except on a hand-to-mouth basis. That alone would dull the market.

In fact who would wish to own feed grains now when the USDA has a broad avenue of disposition at no price limit at this time?

If USDA holds off sales of corn as they report between this time and the new crop year, may it not be probable that USDA will also decline to sell corn at harvest? Under Ezra Taft Benson that policy was followed. This may mean that—based on corn acreage reports of July—USDA may have more corn on hand prospectively than it has now. Nearby corn looks cheap. Possibly the political farm geniuses at USDA may decide that they can bull December corn.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bulk, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Boston: Demand and supply steady; 400 D, 3,000 A 19⅝¢ lb.; 300 D, 3,000 A 19¢; 300 D, 2,250 A 17⅛¢; 300 D, 1,500 A 16¢; 300 D, 750 A 14¢; 75 D, 750 A 13⅛¢.

Chicago: Demand fair; trend steady; supply ample; straight A feeding oil, with 10,000 units vitamin A per gram, 7@7⅛¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Minneapolis: Demand fair; supply ample; 10,000 A 31¢ lb.; 300 D, 2,250 A 17⅛¢ lb.; 300 D, 1,800 A 16¢ lb.; 300 D, 750 A 13⅝¢ lb.

Denver: Demand fair; trend steady; supply plentiful; 31¢ lb.

ALFALFA MEAL

Memphis: Demand fair; trend steady; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $50.60; reground pellets $53.60.

Los Angeles: Demand and trend steady; supply limited; dehydrated meal, 17% protein, 100,000 A $51@52, nominal; dehydrated pellet meal, 17% protein, 100,000 A $53@55; suncured meal, 15% protein $44@45; suncured crumbles, 15% protein $46@47.

St. Louis: Demand slow; trend easy; supply adequate; suncured, 13% fine, sacked $46; dehydrated, 17%, 100,000 A, pellets, demand slow, trend easy, supply ample, bulk $48.50.

Cincinnati: Demand fair; trend lower; supply adequate; 17% dehydrated, 100,000 vitamin A $54.50.

Boston: Demand fair; supply steady; dehydrated, 17% $59; suncured, 13% $49.50, sacked.

Ft. Worth: Demand fair for dehydrated, slow for suncured; supply sufficient; sacked: dehydrated, 17%, 100,000 A $55, truck or rail; suncured: 13% ⅛-in. grind No. 1 $47, truck; 15% fine ground, dry $49, with 2% fat added $51, rail or truck.

Minneapolis: Market still steady; 17% dehydrated, 100,000 units vitamin A reground pellets $51, delivered Minneapolis; oiled reground pellets $53.

Kansas City: Demand slow; trend steady to easy; supply ample; 17% dehydrated alfalfa, 100,000 A, pellets $46@48, reground pellets $47@49; 13% dehydrated alfalfa, 125,000 A, pellets $48@51, reground pellets $49@52; 20% dehydrated alfalfa, 150,000 A, pellets $49@57, reground pellets $50@58; suncured alfalfa, demand slow, supply ample, 13% pellets $32@34, No. 1 ¼-in. $38, sacked.

Buffalo: Demand fair; trend steady; supply good; $64.10, sacked, Boston.

Chicago: Demand moderate; trend easier; supply fair; dehydrated, 17% protein, 100,000 units vitamin A $49.50@51.

Portland: Demand slow; supply plentiful; trend unchanged; $45@73, sacked.

Seattle: Demand fair; trend firm; supply good; 15% protein suncured $53, 150,000 A unit dehydrated $74, both delivered truck loads, sacked.

Denver: Demand fair; trend steady; supply ample; $44.

ANIMAL FAT (STABILIZED)

Louisville: Demand and supply good; trend steady; bleachable white 8¢ lb.; white tallow 7⅝¢ lb.; yellow grease 7¢ lb.; all in tanks.

San Francisco: Demand good; supply ample; bleachable fancy 8¼¢ lb.; yellow grease 7⅝¢ lb.

Boston: Demand fair; supply ample; tallow 7¼¢ lb.; yellow grease 6⅞¢ lb.

Ft. Worth: Demand excellent; supply tight; prime tallow, tank cars 7⅝¢ lb.; drums 9¼¢ lb., f.o.b. north Texas packing plants with returnable drums.

Kansas City: Demand good; trend strong; supply tight; stabilized prime tallow 7@7¼¢ lb.

Atlanta: Demand good; trend stronger; supply limited; poultry 6⅝¢ lb., f.o.b. processing plants.

St. Paul: Export and domestic demand strong; production only adequate; bleachable fancy up another ⅛¢ lb. during week to 7⅜¢ lb., f.o.b. producer's plant.

Chicago: Demand good; trend steady; supply fair; tank truck or carloads, bleachable fancy tallow $7.25 cwt., yellow grease $6.50@6.62½ cwt.

BARLEY FEED

San Francisco: Demand fair; supply ample; rolled $61, ground $60.

Los Angeles: Demand slow; trend weaker; supply adequate; standard rolled $3 cwt., standard ground $3 cwt., both sacked.

Boston: Demand slow; supply light; $45.50, sacked.

Portland: Demand fair; supply adequate; trend unchanged; $46.

Chicago: Demand fair; trend firm; supply adequate; $34, sacked.

Baltimore: Demand and supply fair; trend steady; $44.50, sacked.

Seattle: Demand fair; trend steady; supply good; $45, truck lots.

BENTONITE (SODIUM)

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30 ton carloads: 80 granular $31.50, less than carlots $40; 200 mesh fine $31.50, less than carlots $40.

Denver: Demand slow; trend steady; supply ample; $24.50.

Chicago: Demand fair, supply ample; trend steady; f.o.b. Wyoming and South Dakota shipping points: 200 mesh $14 and net $13.75; fine granular (80 to 100 mesh) $14.25 and net $14; granular, 30 mesh $16.50 and net $16.25.

BLOOD FLOUR

Louisville: Demand slow; trend steady; supply good; $92.50@95, sacked.

BLOOD MEAL

Louisville: Demand slow; trend firm; supply good; $92.50@95, sacked.

San Francisco: Demand and supply fair; $6.50 a unit of ammonia, sacked.

Los Angeles: Demand slow; trend unchanged; supply adequate; $5.50 a unit of ammonia, sacked.

Chicago: Demand quiet; trend firm; supply fair; 80% protein $125, sacked.

Portland: Demand good; trend steady; supply adequate; $120, sacked.

BONE MEAL (STEAMED)

Louisville: Demand slow; trend weak; supply light; $100@105, sacked.

Boston: Demand and supply steady; $105.

Cincinnati: Demand better; supply ample; trend steady; $95, sacked, Cincinnati.

Los Angeles: Demand fair; trend steady; supply ample; imported $80.75, 20 ton lots, sacked.

San Francisco: Demand good; supply ample; $75, sacked.

Ft. Worth: Demand fair; supply sufficient; $100, sacked, f.o.b. Ft. Worth.

Buffalo: Demand and supply fair; trend steady; $105, sacked.

Chicago: Demand quiet; trend firm; supply moderate; $100, sacked.

Seattle: Demand fair; trend steady; supply good; $92, f.o.b. car Seattle, sacked.

Portland: Demand fair; supply adequate; trend fully steady; $94.50@96.50, sacked.

Denver: Demand fair; trend steady; supply ample; $120.

BREWERS DRIED GRAINS

Louisville: Demand dull; trend weak; supply good; $48, sacked, down $2.

St. Louis: Demand slow; trend easier; supply ample; $40.

Cincinnati: Demand poor; trend lower; supply adequate; $46.75.

Los Angeles: Demand good; trend steady; supply limited; $51.

San Francisco: Demand fair; supply ample; $51, sacked.

Boston: Demand and supply good; 28% $46.

Ft. Worth: Demand fair; supply sufficient; 26% protein $55.50, sacked.

Chicago: Demand very slow; trend sharply lower; supply good; 26% protein $31.50@32.50.

Buffalo: Demand fair; trend lower; supply good; $45, Boston.

BREWERS DRIED YEAST

Louisville: Demand slow; trend steady; supply good; 10@10½¢ lb., sacked.

Los Angeles: Demand good; trend steady; supply limited; 10¢ lb., 5 ton lots; 11¢ lb., 1 ton lots; 12¢ lb., less than ton lots; all sacked.

San Francisco: Demand fair; supply good; 10¢ lb., sacked.

Cincinnati: Carlots 11¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb.; all sacked.

Boston: Demand and supply steady; 11¢ lb.

Buffalo: Demand good; trend steady; supply ample; $8.75 cwt.

Portland: Demand fair; supply ample; trend unchanged; 13¢ lb.

Seattle: Demand slow; trend steady; supply ample; $12 cwt., sacked.

Chicago: Demand fair; trend steady; supply ample; 9½@10¢ lb., carlots, sacked; 9⅝@12½¢ lb., l.c.l.

Milwaukee: Demand fair; trend steady; supply ample; 10⅛@12½¢ lb., ton lots, sacked.

St. Louis: Demand fair; trend firm; supply ample; 9½@10¢ lb., carlots, sacked; 10½¢ lb., ton lots; 11¼¢ lb., less than ton lots.

Denver: Demand fair; trend steady; supply ample; 9¢ lb., f.o.b. warehouse.

BUTTERMILK (CONDENSED)

Los Angeles: Demand slow; trend steady; supply adequate; 5⅝¢ lb., 100 lb. lots, in barrels.

Louisville: Demand and supply very light; trend steady; $4@4.25 cwt. in 500 lb. paper drums.

San Francisco: Demand fair; supply good; $5 cwt., drums.

Boston: Demand steady; supply tight; 4¼¢ lb.

Chicago: Demand quiet; trend steady; supply fair; 500 lb. barrels $3@3.25 cwt.

CALCITE CRYSTALS AND FLOUR

(All prices net, sacked, including freight)

New York: Crystals $16.28, flour $10.28.
Buffalo: Crystals $17.11, flour $11.11.
Toledo: Crystals $18.96, flour $12.96.
Boston: Crystals $17.63, flour $11.63.
Lime Crest, N. J.: Crystals $11.59, flour $5.50.

CALCIUM CARBONATE

Cincinnati: Demand fair; trend steady; supply adequate; $7@7.50 cwt.

Los Angeles: Demand fair; trend steady; supply adequate; flour $9.85, 20 ton cars; meal $10.20, 20 ton cars; both sacked.

Chicago: Demand fair; trend steady; supply ample; fine grind, plain, 100 lb. bags $9.54; bulk, in hopper cars $7.54; bulk in boxcars $8.04; granular grind $1 premium.

Minneapolis: Fine grind, 50 lb. bags $13.75; 100 lb. bags $13; bulk, boxcar $11.50; bulk, hopper $11; coarse grind $1 premium, delivered Minneapolis.

Seattle: Demand and trend steady; supply good; $14, sacked, ex-warehouse.

CHARCOAL

Los Angeles: Demand slow; trend unchanged; supply adequate; hardwood poultry: $156, less than ton lots; $144.40, ton lots; both sacked.

San Francisco: Demand steady; supply ample; $141, sacked.

Boston: Demand slow; supply light; granular No. 6 $110.

Chicago: Demand fair; trend firm; supply fair; 50 lb. multiwalls $110.

COCONUT OIL MEAL

Los Angeles: Demand moderate; trend steady; supply adequate; copra cake $63, April.

San Francisco: Demand fair; supply ample; solvent $52, expeller $69.

Seattle: Demand fair; trend steady; supply ample; solvent type $63, f.o.b. car Seattle, sacked.

Portland: Demand slow; trend steady; supply adequate; $63.20.

COD LIVER OIL (FORTIFIED)

Boston: Demand and supply steady; 200 D, 3,000 A 20¢ lb.; 600 D, 2,250 A 18⅛¢; 300 D, 2,250 A 18¢; 300 D, 1,500 A 16½¢.

CONDENSED FISH SOLUBLES

Los Angeles: Demand good; trend steady; supply limited; 3¢ lb.

Boston: Demand slow; supply ample; $37.50@40.

Denver: Demand fair; trend steady; supply ample; 3⅛¢ lb.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are bulk basis, sacked basis $6 more)

Minneapolis: Feed $45.70, meal $74.70.
Atlanta: Feed $49.10, meal $78.10.
Birmingham: Feed $46.90, meal $75.90.
Boston: Feed $50.60, meal $79.60.
Chicago: Feed $39, meal $68.
Cleveland: Feed $47, meal $76.
Denver: Feed $49.30, meal $78.30.
Ft. Worth: Feed $47.80, meal $76.80.
Indianapolis: Feed $44.25, meal $73.25.
Kansas City: Feed $39, meal $68.
Louisville: Feed $45.55, meal $74.55.
New York: Feed $50.20, meal $79.20.
New Orleans: Feed $49, meal $78.
Norfolk: Feed $49.60, meal $78.60.
Philadelphia: Feed $49.80, meal $78.80.
St. Louis: Feed $39, meal $68.

CORN OIL MEAL

Louisville: Demand slow; trend weak; supply light; $54.55, down $2, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $46.

Seattle: Demand good; trend firm; supply ample; $53 car.

COTTONSEED OIL MEAL

Memphis: Demand fair; trend steady; supply ample; prime 41% protein, old process $51.50; new process, 41% protein $51.50.

Louisville: Demand fair; trend stronger; supply normal; old or new process $61.40, sacked, up 50¢.

Boston: Demand and supply steady; $69.50.

Los Angeles: Demand and trend steady; supply adequate; $55@57.

San Francisco: Demand fair; supply ample; 41% $59.20, 44% $63.20.

Cincinnati: Demand poor; trend steady; supply adequate; $60.

St. Louis: Demand slow; trend firm; supply ample; solvent $56.

Ft. Worth: Demand slow; supply adequate; 41% old process $58@60, f.o.b. mills Ft. Worth; carlots, solvent, 2% fat added $57.60, delivered Ft. Worth; pellets $2 additional; hulls $14.50@15.50.

Atlanta: Demand and supply good; trend stronger; 41% $57 Georgia, $54 Alabama, $51.50 Mississippi and Tennessee producing mills.

Seattle: Demand good; trend firm; supply ample; $69, f.o.b. car Seattle.

Chicago: Demand and supply fair; trend steady; Memphis basis: hydraulic $54.50, solvent $55.50.

Buffalo: Demand and supply good; trend steady; $72.50, sacked, Boston.

Kansas City: Demand slow; trend steady; supply ample; 41% old process $58.10@58.60; solvent process $57.60@58.10.

Denver: Demand fair; trend steady; supply ample; $58.50.

Portland: Demand fair; supply adequate; trend unchanged; $69.20.

CURACAO PHOSPHATE

New York: Minimum 14% phosphorus $43.50 sacked, $40.50 bulk, f.o.b. New Orleans, Jacksonville and Philadelphia.

D ACTIVATED ANIMAL STEROL (POWDERED)

Cincinnati: Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 10¢ lb., warehouse.

D ACTIVATED PLANT STEROL (POWDERED)

Chicago: Demand fair; supply ample; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots, less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload $61.25, sacked, 100 lb. multiwall bags, bulk $58.25; truck load $62, sacked, in 100 lb. multiwall bags, bulk $59, f.o.b. Coronet, Fla.

Tupelo, Miss.: Minimum phosphorus 16%, minimum calcium 28%, maximum fluorine .14% $52, f.o.b. Tupelo in 100 lb. multiwall bags, $49 bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum 36%, maximum fluorine .18% $66 (or $3.67 per unit of P), f.o.b. Wales in 100 lb. multiwall bags, $3 less in bulk.

Butte, Mont.: Minimum phosphorus 18%, minimum calcium 32%, maximum calcium 36%, maximum fluorine .18% $81 (or $4.50 per unit of P), f.o.b. Butte, 100 lb. multiwall bags; bulk $78; truck lots of less than 10 tons $10 more, bagged or bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $69.35 net ton, f.o.b. Houston, 100 lb. multiwall bags; $66.35 bulk ($3.65 per unit of P).

Seattle: Demand and supply good; trend steady; $93.50, ex-dock Seattle, sacked.

Portland: Demand fair; trend steady; supply ample; $93.50@95 for product carrying a minimum of 18% phosphorus, 31.5% calcium and a maximum of 0.1% fluorine; $92@93.50 dock, for a minimum of 19 ton lots.

Cincinnati: 18% phosphorus, carlots $74.30, ton lots $84.30; 14% phosphorus, carlots $62.50, ton lots $72.50, f.o.b. Cincinnati.

DICALCIUM PHOSPHATE

Trenton, Mich.: 18½% P $33, bulk, boxcar/hopper car; $36, bagged, in less than carload lots; 21% P, $94.05, bulk, boxcar/hopper car; $97.65, bagged, in carloads or truck loads; $107.65, bagged, less than carload; all prices f.o.b. Trenton, freight equalized with nearest producing point.

Chicago: Bulk, carlots and truck loads, 18½% phosphate $78 and 21% phosphate $89; packed in 100 lb. papers, 10 tons or more, 18½% phosphate $81 and 21% $92; lesser quantities, 18½% phosphate $91 and 21% $102; above prices per ton, f.o.b. Chicago Heights, Ill., or Nashville, Tenn.

Bonnie, Fla.: Minimum phosphorus 18½%, granular, $31 (or $4.38 unit of P), freight equalized from nearest producing point, carload basis; bulk carloads $3 less; in truck loads of less than 10 tons, $10 more. Western slope prices, for delivery at established railroad stations and by truck at regular feed mixing plants: California, Arizona, Nevada and Utah, $99.90; Washington, Oregon, Montana and Idaho, $107.15; bulk carloads $3 less; truck loads less than 10 tons, $10 more.

Columbia, Tenn.: Minimum phosphorus 18.5%, minimum calcium 24% $31, f.o.b. Columbia, in 100 lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Texas City, Texas: Minimum phosphorus 18.5%, minimum calcium 20%, maximum calcium 23%, maximum fluorine .12%; carload and truck load $75.50, sacked in 100 lb. multiwall bags, bulk $72.50, f.o.b. Texas City.

Seattle: Demand good; trend steady; supply limited; $91, ex-dock Seattle, sacked.

Denver: Demand good; trend steady; supply ample; $88.50, delivered, carload.

Cincinnati: 18½% phosphorus $88.80, bagged in carloads; $98.70, bagged in ton lots, f.o.b. Cincinnati; $81, f.o.b. producing points.

DISTILLERS DRIED GRAINS

Cincinnati: Demand poor; trend steady; supply adequate; $56@57.

Louisville: Demand slow; trend very weak; supply good; bourbon grains: light $61, off $5; dark $62, off $5; solubles $73, unchanged; all sacked.

San Francisco: Demand fair; supply ample; solubles $79, sacked.

Boston: Demand fair; supply adequate; $61.

Seattle: Demand good; trend firm; none available; $71, delivered truck lots, sacked.

Buffalo: Demand fair; trend steady to lower; supply good; $61, Boston.

DRIED BEET PULP

Los Angeles: Demand and trend steady; supply adequate; $49.90@50.20.

San Francisco: Demand good; supply fair; $45.51.

Boston: Demand fair; supply spotty; $62.50, sacked.

Ft. Worth: Demand slow; offerings light; plain $62.20, sacked, 50 lb. bags.

Portland: Demand slow; supply ample; trend unchanged; $47.58, sacked.

Atlanta: Demand fair; trend steady; supply tight; $62.50, sacked, delivered.

Buffalo: Demand good; trend firmer; supply poor; $63.50, sacked, Boston.

Seattle: Demand good; trend steady; supply ample; $49, delivered carlots, sacked.

Denver: Demand fair; trend steady; supply ample; $65.

DRIED BUTTERMILK

Los Angeles: Demand fair; trend steady; supply ample; 13¾@14¢ lb., sacked.

Louisville: Demand slow; trend steady; supply normal; 11½@12¢ lb., sacked.

San Francisco: Demand fair; supply ample; 13½¢ lb., sacked.

Boston: Demand light; supply short; 14¢ lb., nominal.

Chicago: Demand slow; trend easier; supply fair; medium acid $9.50@10 cwt., sweet cream $9.50@10 cwt., both sacked.

Buffalo: Demand fair; trend steady; supply ample; $10.95 cwt.

DRIED CITRUS PULP

San Francisco: Demand and supply fair; meal $48, sacked.

Los Angeles: Orange pulp $43, lemon pulp $43, both nominal.

Boston: Demand slow; supply plentiful; $53.50, sacked.

Atlanta: Demand fair; trend steady; sup-

ply good; pulp $35, meal $30@32.50, both sacked, f.o.b. Florida processing plants.
Buffalo: Demand fair; trend steady; supply good; $35, sacked, f.o.b. Florida points.

DRIED SKIM MILK

Louisville: Demand slow; trend steady; supply normal; 11½@12¢ lb., sacked.
Los Angeles: Demand slow; trend steady; supply adequate; 14¢ lb., less than ton lots; 13¾¢ lb., ton lots; both sacked.
Cincinnati: Demand fair; trend steady; supply adequate; 12@13¢ lb., sacked.
San Francisco: Demand and supply fair; 14½¢ lb., sacked.
Boston: Demand and supply good; 12½¢ lb.
Minneapolis: Steady at $12@12.25 cwt.
Chicago: Demand slow; trend steady; supply fair; $10.50@10.85 cwt., sacked.
Buffalo: Demand good; trend steady; supply ample; spray $11.55 cwt.

DRIED WHEY

Boston: Demand and supply good; 5@5½¢ lb.
Cincinnati: Demand fair; trend steady; supply adequate; $5.75 cwt., sacked.
Los Angeles: Demand fair; trend steady; supply adequate; $5.18 cwt., carloads; $5.35 cwt., l.c.l.; both sacked.
Louisville: Demand dull; trend steady; supply light; 5@5½¢ lb., sacked.
San Francisco: Demand steady; supply good; $5.25 cwt., sacked.
Ft. Worth: Demand fair; supply adequate; carlots, standard $5 cwt., sacked, delivered Ft. Worth; ton lots $5.25 cwt., f.o.b. warehouse Ft. Worth.
Portland: Demand fair; supply adequate; trend unchanged; $5.60 cwt., sacked.
Chicago: Demand quiet; trend steady; supply fair; $4.50@4.85 cwt., sacked.
Seattle: Demand steady; trend easy; supply good; $5.85 cwt., ex-warehouse, l.c.l.
Minneapolis: Demand fair; supplies adequate; price steady at $5.15 cwt.
Kansas City: Demand fair; trend steady; supply ample; $5 cwt., sacked.
Denver: Demand slow; trend steady; supply ample; $5.25, delivered, truck load.

FEATHER MEAL (HYDROLYZED)

Boston: Demand good; supply short; $75, sacked.
San Francisco: Demand and supply fair; $89.
Los Angeles: Demand good; trend steady; supply limited; $1 a unit of protein, sacked.
Ft. Worth: Demand good; supply limited; 85% protein $67.50 bulk, $70 sacked, f.o.b. north Texas.
Atlanta: Demand good; trend steady; supply short; $70, f.o.b. Alabama and Georgia processing plants.

FISH MEAL

Louisville: Demand dull; trend steady; supply light; $100@105, dried and sacked.
Cincinnati: Demand fair; trend higher; supply adequate; $103.10.
Boston: Demand good; supply light; 57% $98.
San Francisco: Demand slow; supply ample; $1.55 a unit of protein.
Los Angeles: Demand and trend steady; supply limited; local production, 60% protein $1.80 a unit, sacked.
Ft. Worth: Demand fair; supply sufficient; sacked: 65% protein Peruvian, nominal $103; 60% protein menhaden $108, delivered Ft. Worth.
Portland: Demand fair; supply adequate; trend unchanged; $1.70 a protein unit, sacked.
Seattle: Demand good; trend strong; supply fair; $1.60 a unit protein, f.o.b. truck Vancouver, B.C. (Canadian production).
Minneapolis: 70% Canadian herring this week lost its previous gain of 5¢ unit, price March 30 was $1.50, f.o.b. West Coast, subject to production; 60% West Coast blended advanced $5 ton to $130, sacked, delivered.
Buffalo: Demand fair; trend higher; supply very light; 60% protein menhaden $112.50 bulk, $117.50 sacked.
Chicago: Demand slackened somewhat; supply fair; trend firm; sacked: menhaden, East Coast $100@102, Gulf $100@102; menhaden scrap, East Coast $96@98, Gulf $96@98; Canadian herring meal $1.60 a unit of protein.
Atlanta: Demand good; trend steady; supply limited; 60% menhaden: old crop $96@97, sacked, Chesapeake Bay; new crop, May, June, July $100@105, Atlantic and Gulf ports; imported $98@100, sacked, Gulf ports, April, May arrival.
Denver: Demand fair; trend steady; supply ample; $1.65 a protein unit, west Coast.

HAY

Los Angeles: Demand slow; trend unchanged; supply ample; new crop, U.S. No. 1 $32@34, old crop U.S. No. 1 $30@32; U.S. No. 2 leafy $28@29; U.S. No. 2 green $28@29; U.S. No. 2 $26@27.
Cincinnati: Demand poor; trend steady; supply adequate; by truck—second cutting alfalfa $35; No. 1 timothy $25; red clover $30; No. 1 timothy and clover mixed $30; straw $18.
Louisville: Demand dull; trend steady; supply ample; local hay, any variety, No. 1 $30, No. 2 $28; lespedeza $23@25; straw $18@20.
Boston: Demand and supply steady; No. 2 timothy $39@41.
Ft. Worth: Demand slow; offerings liberal; carlots, baled, No. 1 alfalfa $38@42; No. 2 $36@40, delivered Texas common points.

HOMINY FEED

Cincinnati: Demand poor; trend lower; supply adequate; $39.50.
Memphis: Demand poor; trend weak; supply ample; white $39.50, yellow $39.50.
Louisville: Demand dull; trend steady; supply light; $47.50, sacked.
St. Louis: Demand slow; trend easy; supply ample; yellow $39.
Boston: Demand slow; supply ample; $45.50.
Kansas City: Demand poor; trend steady; supply ample; white or yellow $33.50@34.
Seattle: Demand good; trend steady; supply limited; $54, delivered carlots, sacked.
Chicago: Demand slow; trend firm; supply ample; $39.
Buffalo: Demand poor; trend lower; supply good; $45.50, Boston.

LINSEED OIL MEAL

Cincinnati: Demand poor; trend steady; supply adequate; new process $55.50, old process $60.50, Minneapolis.
Los Angeles: Demand fair; trend steady; supply adequate; local production, 31% protein $71.
San Francisco: Demand fair; supply ample; $72.
Boston: Demand fair; supply light; 34% $74.20.
Louisville: Old process $78, down 50¢; new process $72, down $1; both sacked.
Ft. Worth: Demand slow; supply sufficient; 34% protein, extracted $70.70, April.
Portland: Demand dull; supply adequate; trend unchanged; $86, sacked.
Chicago: Demand moderate; trend easier; supply fair; Minneapolis basis: solvent $54, expeller $60.
Seattle: Demand fair; trend steady; supply good; 34% protein (Montana) $85, delivered carloads, sacked.
Minneapolis: Price weakness mostly because of limited outlets; 34% solvent down $1.50 from last week to $54; 32% expeller down $2.50 to $59.
Denver: Demand fair; trend steady; supply ample; $74.50.

MALT SPROUTS

Cincinnati: Demand poor; trend lower; supply adequate; No. 1 $45.
Boston: Demand and supply limited; $48, nominal.
Chicago: Demand moderate; trend easier; supply fair; No. 1 $39.50.

MEAT AND BONE MEAL

Los Angeles: Demand steady; trend firm; supply limited; 50% protein $1.85 a unit.
Cincinnati: Demand and supply good; trend steady; 50% meat and bone scraps $80, Cincinnati.
San Francisco: Demand good; supply fair; $1.80 a unit of protein.
Boston: Demand slow; supply ample; $1.40 a protein unit; converted 50% $82.50.
Louisville: Demand fair; trend steady; supply good; $90@95, sacked.
St. Louis: Demand fair; trend steady; supply adequate; $82.
Ft. Worth: Demand good; supply light; meat and bone, 50% $80@82 bulk, $83@85 sacked, f.o.b. Ft. Worth.
Seattle: Demand good; trend strong; supply limited; $1.95 per unit protein, ex-processing plant, sacked.
St. Paul: Supply ample; demand slow; price down $2 from last week to $90@94.
Portland: Demand good; supply tight; trend unchanged to higher; $102.50@105, sacked.
Chicago: Demand slow; trend firm; supply fair; 50% protein $90, sacked.
Buffalo: Demand and supply light; trend steady; 50% meat scraps $87.50 bulk, $92.50 sacked.
Kansas City: Demand good; trend steady; supply ample; 50% $87.50.
Denver: Demand fair; trend steady; supply scarce; $83.50.

MILLFEED

Minneapolis: Demand very slow and prices worked lower during week even though production was down from week before; sacked bran down $2.50 to $38.50@39, bulk $5 less; sacked middlings down about $2 to $37.50, bulk $5 less; sacked red dog down $1 to $41.50.
Kansas City: Demand slow; trend easy; supply ample; sacked, bran $34@34.50, shorts $34@34.50; bulk, bran $28@28.50, shorts $28.50@29, middlings $28.50@29.
Ft. Worth: Demand fair; supply sufficient; bran, bulk $39, burlaps $43.50; bulk gray shorts $40, burlaps $44.50; bulk middlings $40, delivered Texas common points; bulk bran and shorts $1 lower; sacked bran and shorts unchanged to 50¢ lower, and middlings 50¢ lower compared with previous week.
Chicago: Demand poor; trend sharply lower; supply ample; standard bran $34.50, standard midds. $36.50, red dog $37.
St. Louis: Demand slow; trend weak; supply ample; sacked bran $39, shorts $39; bulk bran $33, middlings $34.
Cincinnati: Demand poor; trend lower; supply adequate; bran $40.50, middlings $40.50.
Boston: Demand good; supply fair; bran $48.10, middlings $47.10.
Buffalo: Inventory replacements of millfeed from both large and small mixers was on a hit-and-miss basis last week; country trade replacements perked up a little; one spokesman said there has been no incentive this season to stockpile anything; sacked differential on bran and middlings held steady at $5.50; bulk and sacked bran declined $2.50@3; bulk and sacked middlings and red dog dropped $3@3.50; quotations March 29: bulk bran $37@38, sacked $42.50@43.50; bulk middlings $37@38.50, sacked $42.50@44; bulk red dog $38@41, sacked $42.50@46.
Memphis: Demand fair; trend weak; supply ample; wheat bran $37.50, gray shorts $37.50, standard midds. $37.50.
Louisville: Demand slow; trend weak; supply good; bran $46.30, down 50¢; mixed feed $46.80, down 50¢; shorts $47.55, down 55¢; all sacked.
Seattle: Demand good; trend steady; supply ample; $38, delivered common transit points, carlots.
Portland: Demand slow; trend firm; supply tight; $37@38.
Denver: Demand fair; trend steady; supply ample; shorts $38, bran $38, millrun $38.
San Francisco: Demand good; supply fair; millfeed $44.50, red bran $47.50.
Los Angeles: Demand slow; trend easier; supply adequate; standard millrun $42.50@43; red bran $48.50.

MINERAL FEED

San Francisco: Demand steady; supply good; all-purpose with iodine $70, sacked.
Ft. Worth: Demand fair; supply adequate; all-purpose granules $85, block $95; mineral phosphorus granules $106, block $113; cattle-sheep mineral 7% phosphorus granules $97, block $105; hog mineral phosphorus 3½% granules $87, phosphorus 2% $72 (all in 50 lb. paper bags).
Sioux City: 50 lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

MOLASSES

San Francisco: Demand and supply good; $25.75, f.o.b. cars Richmond, Cal.
Los Angeles: Demand good; trend steady; supply adequate; $25.50, f.o.b. tank cars; $25.75, f.o.b. tank trucks.
Louisville: Demand fair; trend stronger; supply normal; 13⅜¢ gal., tank car lots, f.o.b. Gulf ports, up ⅜¢ gal.
Memphis: Demand fair; trend steady to higher; supply ample; blackstrap 13@13¼¢ gal., tank car, f.o.b. New Orleans, and $29.50 ton, delivered Memphis, truck.
St. Louis: Demand fair; trend up; supply ample; 13¼¢ gal., tank car, New Orleans.
Cincinnati: Demand fair; trend steady; supply adequate; 13¼@13⅜¢ gal., New Orleans.
Boston: Demand steady; supply ample; 16¼¢ gal. in tank cars.
Ft. Worth: Demand slow; supply sufficient; blackstrap 13¾¢ gal., f.o.b. Houston; truck $29.95, delivered Ft. Worth, seller's market price on date of shipment.
Minneapolis: Market unchanged; blackstrap $33, tank truck, delivered; beet $30, blend $31.50.
Atlanta: Demand fair; trend steady; supply ample; citrus $20, f.o.b. Florida processing plants.
Buffalo: Demand and supply good; trend higher; 16½¢ gal., f.o.b. Albany.
Kansas City: Demand fair; trend steady; supply ample; blackstrap 13¼¢ gal., f.o.b. New Orleans.
Seattle: Demand and supply good; trend firm; $25.75, f.o.b. Seattle, tank truck lots.
Denver: Demand fair; trend steady; supply ample; $33.60, tank.

OAT PRODUCTS

Los Angeles: Demand slow; trend weaker; supply adequate; local production, pulverized $59, sacked.
Louisville: Demand fair; trend easy; supply normal; reground $22.40, rolled oats $80.90, feeding oatmeal $74.40, crimped oats $63.90, pulverized oats $49.90, all sacked.
Memphis: Demand poor; trend weak; supply ample; 3½% protein, reground oat feed $21.70.
Cincinnati: Demand poor; trend steady; supply adequate; pulverized white oats $42@47.
Boston: Demand slow; supply ample; white pulverized $53, reground oat feed $24.50, both sacked.
Ft. Worth: Demand slow; supply sufficient; 10% protein oat millfeed $41.80; reground $21.30, sacked.
Seattle: Demand and supply fair; trend steady; oat feed $57, delivered, truck lots, 38 lb. or better.
Chicago: Demand quiet; trend firm; supply fair; reground oat feed $12; No. 1 fine ground feeding oatmeal $66; feeding rolled oats $70.
Kansas City: Demand fair to good; trend steady; supply ample; oat mill by-product $14@15, sacked; feeding rolled oats $67@70, sacked.
Minneapolis: Most items about $1 easier than last week; sacked feeding rolled down $1 to $73; sacked feeding oatmeal down $1 to $60.50; sacked pulverized down 50¢ to $40.50; sacked crimped down $1 to $57.50; sacked oat feed steady at $20.
Portland: Demand slow; trend barely steady; supply adequate; No. 2 extra heavy white oats $55@55.50.

OYSTER SHELL

San Francisco: Demand fair; supply ample; local $15, eastern $26, sacked.
Louisville: Demand good; trend steady; supply normal; in 80 lb. paper bags $23.95, 50 lb. paper bags $24.20, 25 lb. paper bags $26.45.
Los Angeles: Demand fair; trend steady; supply adequate; $15.40, sacked.
Cincinnati: Demand fair; trend steady; supply adequate; 80 lb. bags $23.85, 50 lb. bags $24.10, 25 lb. bags $26.35.
Boston: Demand and supply steady; in paper $26.52.

PEANUT OIL MEAL

Atlanta: Demand fair; trend steady; supply limited; 45% $51 for solvent process, $53 for expeller process, f.o.b. Alabama and Georgia producing mills.

PEAT MOSS

San Francisco: Demand and supply fair; $3.65 a bale.
Cincinnati: Demand and supply good; truck loads $3.45 a bale, f.o.b. Cincinnati.
Los Angeles: Demand fair; trend steady; supply ample; Canadian 5.6 cu. ft. bales $3.65.
Boston: Demand and supply steady; $3.15 a bale, in carlots.
Chicago: Demand and supply fair; trend firm; standard 7½ cu. ft. bale $3.80.

POTASSIUM IODIDE, U.S.P.

Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures: 250 lb. drums $1.50, 200 lb. in 100 lb. drums $1.50, 100 lb. drums $1.51, 25 lb. drums $1.53, f.o.b. Cincinnati.
Chittenango, N.Y.: Demand good; trend firm; supply adequate; standard trace mineral blocks, 90% U.S.P. K.I. and 10% calcium stearate, magnesium carbonate or calcium hydroxide: 100 lb. drums $1.42 lb.; 200 lb. and up $1.40 lb., delivered basis.

POULTRY BY-PRODUCTS

Los Angeles: Demand good; trend steady; supply limited; $1.60 a unit of protein, sacked.
Boston: Demand steady; supply tight; $85@90.
Ft. Worth: Demand good; supply scarce; $87.50, sacked, f.o.b. north Texas plant.
Atlanta: Demand good; trend steady; supply sold for April; meat meal $87, f.o.b. Alabama and Georgia processing plants.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gm. in less than ton lots in 3.36 to 16 gm./lb. mixtures; 3¢ in ton lots or more, freight prepaid or paid to destination.

RICE BY-PRODUCTS

San Francisco: Demand good; supply ample; bran $41, sacked.
Los Angeles: Demand and supply limited; trend steady; California production, high fat content, bran $52.50, sacked.
Ft. Worth: Demand moderate; supply sufficient; rice bran $35@36, f.o.b. south Texas rice mills, sacked; hulls $5, sacked.
Atlanta: Demand fair; trend steady; supply limited; bran $43, sacked, delivered.

SCREENINGS

Cincinnati: Demand poor; trend steady; supply adequate; unground grain screenings $15@16, Cincinnati.
Minneapolis: Demand for both Canadian and domestic light; Canadian down another $1 to $17; domestic lights slumped $2 to a new range of $14@8, domestic mediums steady at $10@18, domestic heavies steady at $18@26; 15% flax screenings steady at $36.
Chicago: Demand slow; trend firm; supply ample; ground grain $31.50; Canadian $26, sacked.
Buffalo: Demand fair; trend lower; supply good; ground, sacked $33.75, New York; bulk, unground $25.50, New York.

SOFT PHOSPHATE

(Sacked, delivered)

Atlanta: $20.65.
Buffalo: $25.50.
Chicago: $24.96.
Cincinnati: $23.64.
Des Moines: $25.42.
Kansas City: $25.07.
Memphis: $22.28.
Minneapolis: $26.12.
Philadelphia: $24.51.
St. Louis: $24.32.

SORGHUMS

Ft. Worth: Demand slow; supply sufficient; No. 2 yellow milo $2.05@2.07 cwt., delivered Texas common points.
Los Angeles: Demand slower; trend weaker; supply ample; milo $2.21½ cwt.

SOYBEAN OIL MEAL

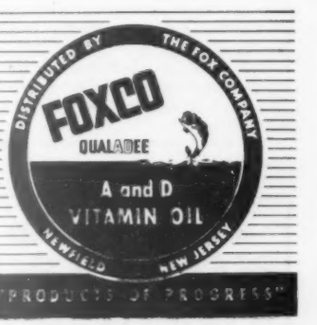
Los Angeles: Demand slow; trend firmer; supply adequate; $87.90@89.10.
Louisville: Demand dull; trend strong; supply light; $78.20, sacked, up $2.
St. Louis: Demand fair; trend firm; supply ample; 44% $69.50, 50% $75.50.
Cincinnati: Demand poor; trend higher; supply adequate; $68@69, Decatur.
Memphis: Demand fair; trend higher; supply light; prime 44% solvent $64.50, f.o.b. Memphis.
San Francisco: Demand fair; supply ample; $83.50.
Boston: Demand good; supply adequate; 44% $65, 50% $72, both f.o.b. Decatur.
Ft. Worth: Demand good; supply sufficient; 44% $72.70@74.40, April; 50% $81@83, April.
Minneapolis: Sharply higher prices for soybeans, reports of pending production curtailment and the tense situation in Laos pushed meal prices upward during the week; 44% advanced $2.50 to $62.50, Decatur; 50% also up $2.50 to $68.50, Decatur.
Chicago: Demand good; trend sharply higher; supply moderate; Decatur basis, 44% protein, unrestricted billing $67 and E.T.L. $64; 50% protein, unrestricted billing $74 and E.T.L. $71.
Kansas City: Demand slow; trend steady to strong; supply adequate; 44% solvent process $66@66.50, Decatur.
Atlanta: Demand fair; trend steady; supply good; 44% $71, delivered.
Denver: Demand fair; trend steady; supply ample; 44% $78.
Seattle: Demand fair; trend easy; supply ample; $83.70, delivered, carlots.
Portland: Demand fair; trend $5.10 higher; supply tight; 44% $89.10.

TANKAGE

St. Louis: Demand fair; trend steady; supply ample; $86.
Cincinnati: Demand better; trend firmer; supply fair; 60% digester $87.50, Cincinnati.
Louisville: Demand slow; trend steady; supply good; 60% protein $92.50@97.50, sacked.
Ft. Worth: Demand good; supply light; 60% digester $87.50, sacked, Ft. Worth.
Kansas City: Demand good; trend firm; supply ample; 60% digester $87.50.
St. Paul: Demand slow; supplies ample; price down $6@7 from last week to $85@90, sacked.
Chicago: Demand slow; trend steady; supply fair; 60% protein $92.50, sacked.

UREA FEED COMPOUND

Woodstock, Tenn.: Minimum 42% nitrogen, 262% protein equivalent; $100, bagged, f.o.b., freight equalized with nearest producing plant; bulk $96.
Lima, Ohio: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged.
Pryor, Okla.: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged; $96, bulk cars or trucks, freight equalized with nearest producing point.



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Belle, W. Va.: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b. bagged; $96, bulk cars or trucks, freight equalized with nearest producing point.

LaPlatte, Neb., and South Point, Ohio: Minimum 42% nitrogen, 262% protein equivalent, $100 ton, f.o.b., bagged; $96 ton, bulk, cars or trucks, freight equalized with nearest producing point.

Cincinnati: Minimum 42% nitrogen, 262% protein equivalent, carloads or truck loads $100 delivered, bagged; less than carloads or truck loads $110, f.o.b. agent's warehouse; bulk $4 less.

VEGETABLE & ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand good; supply extremely limited; 6¾¢ lb., f.o.b. north central Texas.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; 50 lb. or more $1.40, less than 50 lb. $1.45, freight allowed to destination.

WHEAT GERM MEAL

Buffalo: Demand good; trend steady; supply fair; commercial grade $69, sacked, f.o.b. Buffalo.

Minneapolis: $52, jutes.

CONVENTION

(Continued from page 7)

its." It will feature a discussion of future programs for an "in season-out of season" leveling of production activities, and the possibilities of contracting production and its place in an egg industry in the West.

The turkey conference will be held Friday afternoon. The featured speaker will be Hermon L. Miller, director of USDA's poultry division, whose talk is entitled "Where Do We Go From Here?" His presentation will include an up-to-the-minute discussion of wholesomeness inspection requirements—their effect on product acceptance or rejection.

Mr. Miller will also speak on the future plans of the department and the effect of these plans on the industry. A qualified look at purchase programs now under way and those possible in the future will be discussed.

"Merchandising and its Benefits to You" will be the title of William C. Nigut's talk when he speaks at the poultry conference Saturday morning. Mr. Nigut, owner of the William C. Nigut Co., Chicago, is a national merchandising authority.

Also speaking at this conference will be Dr. George L. Mehren, director, Giannini Foundation, University of California, Berkeley, who will speak on the topic of "Yesterday, Today and Tomorrow"—a presentation of history and prophecies for the poultry industry.

Dr. Cliff D. Carpenter, Cliff D. Carpenter Associates, Laguna Beach, Cal., will preside at the poultry conference.

The convention will include general sessions also.

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PHOSPHATE

(Continued from page 7)

ern agriculture. Some 70% of the firm's total dollar income comes from agriculture while 85% of the organization's employees function in agriculture," Mr. Hanson said. "IMC has an option on additional Portland port facilities to carry out future expansion plans."

Harold Steinman, IMC field sales manager, said that the selection of Portland as the Tricaphos distribution center came largely because of the ready access of supplies to IMC's market area in the Pacific Northwest.

The first shipment will be distributed throughout Oregon, Washington and Idaho, with future expansion to the entire Western Slope feed manufacturing and feeding area.

EARNINGS

(Continued from page 1)

share reported a year ago. Half year earnings of 40¢ per share were up from the 32¢ of a year earlier.

In a statement to stockholders, Howard Kellogg, Jr., chairman of the board, and Fred W. Thomas, president, said that a slight increase in soybean processing margins, coupled with favorable conditions continuing in flaxseed crushing and feed manufacturing, sparked the turn-around.

"An increase in sales reflects not only larger unit volume but higher end product prices for virtually all our marketed items," the statement said. "Our soybean and feed manufacturing divisions will probably set peak records for the year from the standpoint of unit volume."

Spencer Kellogg's feed divisions are The Beacon Milling Co., Cayuga, N.Y., with five plants in the northeastern U.S., and Professional Feeds, Kansas City, with six mills in the Midwest.

The company's sales for the second quarter were $30,689,973, compared with $25,957,257 a year ago. Net earnings were $291,393, compared with $108,558. Sales for the first half of the fiscal year were $59,936,874, compared with $55,306,633 a year earlier. Net earnings were $600,000, compared with $469,000.

Commenting on soybean supplies and prices, the company officers said: "It is becoming increasingly apparent that soybean supplies will be insufficient to permit capacity crushing through the balance of the present crop season. This has caused an advance of nearly $1 bu. in the price of soybeans, and an equivalent amount in soybean products. Farmers' intentions to plant (as of March 1) show an increase in soybean acreage of 10% this spring versus a year ago, which will bring supply and demand more in balance next fall, assuming the full crop potential is realized. Wide price fluctuations are ordinarily detrimental to the processor, as the buyers of our products prefer stable markets."

The statement also called attention to the Spencer Kellogg research department, pointing out, for one thing, some of the special products made for industry.

MISSISSIPPI

(Continued from page 1)

ration represent consumption of 185,000 bu. per week. Officials estimated that 2-4¢ per bushel could be saved by using barge transportation.

The projected facility at Vicksburg, to be located on a six acre tract in the new harbor area, is expected to cost from $450,000 to $500,000. The facility will include a marine leg elevator which will automatically load or unload 6,000 bu. per hour. Hauling from Vicksburg to patrons will be let by private contract. Grain will be available to the trade as well as to the stockholders.

Already, $225,000 in stock has been subscribed, with $300,000 as the goal. The meeting to organize the new corporation was held in Forest following several months' study by a committee composed of Mr. McCarty; Fred Gaddis of Forest; Dewey Sanderson of Laurel; and Dewey Walters of Columbia.

Besides the committee, others who attended the meeting and became original stockholders were: Mississippi Federated Cooperatives, Jackson; Magee Cooperative, Magee; Morton Broiler Farms, Morton; Fred Adams Feed Mill, Mendenhall; Hilbun Poultry Co., Laurel; Sanders Brothers Feed Mill of Raleigh and Laurel; Ramzey & Reagan Feed Mill, Carthage; H. H. Haralson, Harperville; and D. T. Irby Feed Mill, Hattiesburg.

The group reported many others sent word they want to buy stock although they could not attend the organizational meeting. No financing is involved other than the purchase of stock by patrons who use grain in milling operations.

PIGS

(Continued from page 1)

mental treatment.

Feed required per pound of gain varied, and neither type of flooring affected it consistently.

Dr. Jensen observed that pigs on the steel-mesh floor showed no adverse effects from being on the mesh. Their feet and legs, in particular, showed no harmful effect. Pigs on steel mesh also stayed much cleaner than those on concrete.

The research men provided a wooden overlay as a sleeping area for pigs on the steel mesh. Pigs used the overlay except during hot weather, when they preferred the cooler mesh.

Workers cleaned the concrete floors daily. Cleaning of the concrete under the steel mesh varied from daily in hot weather to monthly during the winter.

BROILERS

(Continued from page 1)

corresponding week a year ago. In previous weeks the egg set has exceeded the corresponding weeks of 1960 by 23% for March 11 and 26% for March 18.

Settings were up from the previous week in 13 of the 22 states. States reporting sizable increases include Georgia, Arkansas, and Texas.

Placements in the 22 states totaled 44,027,000 broiler chicks. This was 6% above the previous week and 24% above the corresponding week a year ago. Increases were reported for 15 states compared with the previous week. States showing appreciable increases include Georgia, Mississippi, Arkansas, Maryland and North Carolina.

The average price paid per pound for broilers in Delmarva was 17.45¢. The week before the price was 18.04¢ and a year ago the price was 18.02¢.

PROTEIN

(Continued from page 1)

able to indicate which factors have the greatest influence on the protein content. Industry tests of 1960 grain sorghum raised in Kansas have ranged from 4.6% to 12.5% in protein with most of the crops falling between 7 and 10%.

"It is vital in the formulation of poultry and swine rations that the ration be properly balanced for protein, fat and fiber, and fortified with the necessary minerals, vitamins, antibiotics, etc. Formulation of dairy and beef feeds is only slightly less critical. The energy value of grain sorghum remains high and comparable to corn," Dr. Schoeff said.

Maintaining Quality

The importance of maintaining product quality and performance is of prime concern to the feed manufacturer and dealer, he said. Good management also recognizes it is costly to put more protein in a given feed than the formula requires.

Dr. Schoeff said the greatest variation in protein content is at the farm. By the time grain sorghum is collected at the country elevator, shipped to a central terminal and placed in large storage bins, sufficient mixing and blending has taken place to bring the protein content within a 1 to 2% variation.

The biggest problem of proper formulation is at the retail dealer level where custom grinding and mixing service is offered or on the farm where the protein level of the grain sorghum is unknown, he noted.

"The protein figure shown in standard feed analysis tables for grain sorghum is no longer reliable based on information now available. Because of the wide variation that currently exists in protein content of grain sorghum, a new average figure cannot be recommended at this time for formulation purposes," said Dr. Schoeff.

He urges all segments of the feed industry to follow a strict quality control program, then formulate and mix their feeds based on the protein and energy levels of grain sorghum on hand.

He added that feed manufacturers with laboratory facilities can perform a real service for their dealers and farm customers by offering to make protein analyses of grain sorghum samples taken from available supplies. Commercial laboratories located in most of the larger cities will make a protein analysis quickly and for a nominal cost, he advised.

PROBE

(Continued from page 4)

and when sales are likely to have the least effect on the market.

He noted that the department expects additional farm storage to be built this year under a recently-announced program encouraging such building, and it also believes that some 150 to 200 million additional bushels of commercial storage will be built.

Reconcentration of wheat stocks—movement from the Southwest to the Gulf and the West Coast—is now under way, he said, and the department is planning its moves on corn reconcentration.

At the end of February, the government held 3 billion bushels of grain in its inventory and another billion as loan security. This total is up 240 million from a year ago.

"We appreciate the fine cooperation of the storage industry and look forward to more of it," Mr. Ballou said.

Department Goals

Charles Murphy, under secretary of agriculture, told the group that the main job of the department is to increase the income of farmers. "We expect to add $1.5 to $2 billion to farm income this year as a result of actions taken so far," he said.

The department also has a responsibility to trade and to industry, as well as to consumers, he said. "We will try to reduce the cost of our programs. We don't have all the answers, and some will say we don't have any of the answers."

Mr. Murphy said the administration expects the feed grain program to: Increase farm income 10%; provide abundant supplies of meat, milk and eggs; reduce costs to the government by $400 to $600 million; curtail the buildup of feed grain stocks.

Mr. Murphy asked the grain men to take a "friendly interest in the program in helping to make it a success."

Robert Lewis, another member of the CSS staff, also spoke.

ELECTION

(Continued from page 4)

mary channels of trade.

Foster orderly competition in transportation of grain and grain products.

Continue to work for uniform grain standards.

Strive for maintenance of high standards of cleanliness in handling all food grains and work for a government role in the food and drug area, that will result both in proper public health protection and in reasonable enforcement that will recognize the important distinctions between food and feed grains that must be observed if progress in animal agriculture is to continue.

Work for equitable treatment by government of all firms so as to foster a competitive marketing system, including opposition to laws and regulations that would create discriminatory advantages for one segment of the industry and working for constructive legislation to correct tax inequities.

Work for reasonable treatment of country elevators and retail feed stores under wage-hour legislation to preserve flexibility in meeting needs of local farmers.

Bigger Budget

Mr. Force, in his keynote address, described the additional services required by members, including additional information and public relations programs, assistance in grain and feed sanitation and the need for a full-time feed man and an agricultural economist on the association staff.

The association needs a budget of approximately double its current one to meet membership requests, he said. "The best answer to these needs," he said, "is an expanded membership. April 18 has been selected as membership expansion day. All of you will be asked to give one day of your business life to gain new members for your national association".

Sam Rice, Jr., is chairman of "M.E. Day," and he will work with area chairmen and with the cooperation of state associations, Mr. Force said.

GENERAL MILLS

(Continued from page 1)

myra, Pa.; Ravenna, Ohio, and Middlebury, Vt., Mr. Woolley said.

Earlier the division had announced establishment of new feed milling locations at Monroe, N.C.; Shenandoah, Va., and Seaford, Del.

The six new facilities are part of a planned program to decentralize General Mills' formula feed production and locate smaller mills close to major feeding areas, Mr. Woolley pointed out.

Coinciding with the opening of the new facilities will be the closing down of the division's Rossford, Ohio, feed plant on May 31. This mill, one of the largest feed plants in the country, has been operated by General Mills since 1929.

The feed division of General Mills currently has 25 feed plants either operating, or soon to be operating, in locations across the country.

Commenting on the new milling facilities in the East, Mr. Woolley said: "We are moving ahead in realistic fashion to vastly improve our service to meet the needs of today's modern livestock and poultry feeding operations in the eastern part of the U.S. The six new locations are aimed at this objective."

Each of the new locations will make avaailable a complete line of Larro Sure-Feeds, according to H. R. Anderson, feed division regional sales manager, eastern region.

The original mill at Rossford was built by the Larrowe Milling Co. in 1914, and the present modern mill addition began operation in 1920.

"The decision to close the Rossford mill was arrived at reluctantly," Mr. Woolley said. "The company will make every effort to assist those employees who are adversely affected."

The decision on the Rossford feed plant does not affect operations at an adjoining soybean processing plant or at a cake mix and cereal plant.

The new mill facilities at Ravenna and Palmyra are expected to be completed by June and July. The Middlebury facility, a distribution center, also will be ready by mid-summer.

Acquires Feed Mill At Nashville, Ark.

NASHVILLE, ARK.—The feed division of General Mills has purchased and is now operating a feed mill at Nashville.

The plant, with a capacity of some 100 tons per eight-hour shift, was purchased from South-Ark Feed Mills, Inc. The plant is primarily a poultry feed mill, serving company and customers' poultry operations, but can make a full line of feeds. The facility includes pelleting and other equipment.

General Mills also has a feed plant at Russellville, Ark., and a toll plant at Hot Springs, which is the southern region headquarters.

EGG PRICES

(Continued from page 4)

increase in the early fall laying flock, USDA commented.

USDA said that if egg prices remain weak in the next month or two, the late April and May hatches could show smaller increases over 1960. However, the hatch is likely to be up to the 12% increase or greater, the report stated.

Egg production, now near its seasonal peak, will continue high for another month or two, and then gradually decline, the report states. Production during most of this period is unlikely to exceed 1960 because the present laying flock is about 3% smaller than a year ago and because springtime rates of lay generally show little variation from year to year, it was stated.

Prices received for eggs during the second and third weeks of March were generally the lowest in eight months. However, they exceeded 1960 by a noticeable margin, the report said. The declines in late February and early March were mostly in line with the seasonal expectations and the general level of egg prices in recent months has been favorable, as indicated by the large increase in chick hatchings so far this year, USDA commented. Some further seasonal decline in egg prices is possible, it was said.

3 Salesmen Named

TOLEDO, OHIO—The Multiwall Bag division of Owens-Illinois Glass Co. has expanded its sales organization by the addition of three new sales representatives, J. R. Murphy, general sales manager, has announced.

Alvin L. Wistert has been assigned to the western sales region with headquarters in Chicago; William E. Wehner, Jr., to a new sales territory covering southern Ohio, southern Indiana and Kentucky with headquarters in Louisville, and Kenneth J. LaMontagne to the eastern region in New York.

Mr. Wistert has been in industrial sales work in Detroit for the past six years. Mr. Wehner has been connected with multiwall bag sales for the past seven years in Atlanta. Mr. LaMontagne moves to New York from Valdosta, Ga., which is the location of the O-I multiwall bag manufacturing facility.

Criminal Indictment Issued in Drug Case

NEWARK, N.J. — A criminal indictment was issued this week in Essex County (N.J.) Court against Dr. Robert S. Aries on a charge of receiving stolen goods in connection with the new poultry drug Amprol, introduced by Merck & Co., Inc., last year.

Dr. Aries is charged with receiving from a Merck employee stolen samples of amprolium, which Merck markets under the name Amprol. Merck says that Dr. Aries was in the process of illegally selling the samples together with certain technical Merck data to firms around the world when the facts were uncovered by company employees.

An indictment was also returned against Dr. Aries in the Federal District Court for the District of Connecticut Dec. 23, 1960. It charges him with receiving, concealing and storing quantities of amprolium over a six-month period, well knowing the "drug to have been stolen, unlawfully converted and taken."

In addition to these criminal charges, Dr. Aries faces a civil suit filed by Merck last June against him and various companies and individuals affiliated with him, seeking damages, injunctions against any further disclosure of the valuable secret data and return of all stolen papers and documents. Merck says that civil and criminal actions have also been brought in Switzerland and France, where Dr. Aries has been living since the company's suit was filed.

Another company, Rohm & Haas Co., has filed civil actions in this country involving other products and processes following revelations in the court records in the case, Merck said.

B. J. Gibson Featured By Indianapolis Paper

INDIANAPOLIS—B. J. Gibson of the B. J. Gibson Co. here was recently featured in an article in the Indianapolis News. Mr. Gibson's company has been a wholesaler of various items to the feed and poultry industries for over 35 years, the article noted.

The newspaper article told of how Mr. Gibson started as a flour salesman, but was intrigued by the waste products he saw around bakeries and elsewhere. He quit selling flour and went into the salvage business.

Among items he has sold are vinegar factory residue, imitation coffee made during the war, stale fruit cakes, dried potatoes, cream puff mix, pie crust mix and cookie crumbs, the article stated.

However, it was noted that poultry industry people probably know him best for Southern Sunshine Poultry Litter, which is made of peanut hulls. The article said that Mr. Gibson had provided work for many sweepers at poultry conventions by giving away tons of peanuts to promote the poultry litter.

Building Purchased

PETALUMA, CAL. — Dairymens Feed & Supply Co. members have purchased the building and machinery formerly owned by Dave Soren.

Mr. Soren, one of the founders of the cooperative, reports business of more than $1 million last year. He will continue as manager of the group, which is described as a fast-growing organization with members as far west as Hawaii.

PARKS OFFICES MOVED

KANSAS CITY—The J. P. Parks Co., feed jobbing and brokerage firm, has moved its offices from the sixth floor to 929 Board of Trade Bldg., Jerry Parks announced. The phone number remains the same.

Price Tone Off Some, But Swine Outlook Remains Favorable

URBANA, ILL. — Feed men who rely on hog producers for a significant share of their feed sales have at least one reason for a fairly optimistic approach to the immediate future. Although hog prices at various points during 1961 are likely to be below the 1960 marks, the swine business outlook remains favorable.

L. H. Simerl, University of Illinois agricultural economist, says prospects cleared up considerably with the release of the quarterly pig crop report in mid-March (Feedstuffs, March 18, page 1).

The word "favorable" may need some qualification, however, because the usual winter-to-spring price rise is not expected this year—for three reasons, according to Prof. Simerl:

"First, prices did not make a seasonal decline last fall, so they were already high through the winter season.

"Second, the 1960 fall pig crop was a comparatively large one, so there is no reason to expect any shortage of pork.

"Third, for six months now sow farrowings have been running 7-8% larger than a year earlier."

Supplies Larger

Prof. Simerl says indicated market supplies during the April-June quarter are 4-6% larger than they were a year ago. Prices in this period may average slightly lower than last year, when they ranged from $16 to $18 for barrows and gilts at midwest terminals.

For the third quarter—July-September—a price of near $16 is expected, and for the fourth quarter—October-December—the price may be in the $14 area.

For both the third and fourth quarters of this year, Prof. Simerl explains, market supplies now figure to be 8-10% larger than in 1960. "No one expects prices to equal the $17.25 average posted last fall, but they should be much better than in 1959, when the terminal average was only about $13.40," he observes.

Pork Demand Steady

"The business recession should not hurt demand for pork too much. Pork is not an expensive meat. And business may be improving by next fall. The supply of competing meats will be a little larger than that of last year."

Prof. Simerl says the indicated spring crop for this year—51.3 million head—is 19% smaller in proportion to population than was the pig crop of 1955.

"For next winter, the first quarter of 1962, we may have market supplies that are 5-7% larger than those of the first quarter of this year," Prof. Simerl says. "This forecast is based on reports from farmers in March, which indicated that they planned to increase their summer farrowings by 5%. If these plans are not changed too much, prices for hogs next winter may be around $2 cwt. lower than those of this past winter."

Iowan Named Director Of CSS Grain Division

WASHINGTON — Arthur Thompson, an Iowan with 30 years of experience in farming and agricultural journalism, and government program administration on local, national and international levels, has been appointed directer of Commodity Stabilization Service grain division.

Mr. Thompson's background includes employment as a writer for the original AAA, and long-time employment for Wallaces' Farmer publication, as well as editor for the Washington Newsletter for Farmers Union.

CONDEMNATIONS

(Continued from page 6)

(3) When a disease appears, obtain a laboratory diagnosis so that specific control measures can be taken.

(4) Observe good poultry management practices.

(5) Establish and maintain complete performance records from the breeding stock through the processing plant so that sources of problems can be pinpointed and corrective measures taken.

A PRELIMINARY REPORT OF THE ACTIVITIES IN ALABAMA TOWARD REDUCING LOSSES FROM CONDEMNATIONS, PARTICULARLY AMONG BROILERS—Dr. S. A. Edgar, poultry pathologist, Auburn University, said that his study of condemned birds disagreed with the inspection service on an average of about 50% of the time. He said that in his opinion, under existing regulations, 1,260 out of 2,788 birds sampled should have been passed, cleaned and passed or, at least, parts passed.

Dr. Edgar said there was too much variation in inspection between plants and between inspectors within some plants. Average agreement with inspection by plants for an eight month period ranged from a low of 22% to a high of 91.7%. Between inspectors within plants, agreement ranged from 0-100%. The percentage of agreement improved with time, he said.

Greatest cause of condemnation was a generalized inflammatory process due to CRD, according to the group conducting the study. That group included in addition to Dr. Edgar, R. N. Brewer, Dr. E. C. Mora and J. Pruett.

They said that at the outset, losses from plant error were mostly due to cadavers, mishandling of birds resulting in bruising, contamination and overscalds. There was a need for "standby" trained personnel at the "killing," "changeover" and initial eviscerating stations. Some plants lacked proper supervision at key stations along the lines, the researchers commented.

Dr. Edgar said the production or flock study revealed, among others, the following factors were related to increased condemnation: large flocks and wide and long houses, inexperienced growers, overcrowding under brooders, respiratory disease outbreaks and persistence of signs and symptoms, moderate infections of roundworms or coccidiosis, limited feeding of birds (one or two times a day) and poor feed conversion. He said that factors, among others, which seemed to have no bearing on condemnation rate were the distance between houses or between farms, type or size of brooder, spacing of brooders, supplemental heat, debeaking or a history of previous disease outbreaks on farms.

He stated that there was almost a universal need for better relations and communications between plant management and the Inspection Service and for better liaison within the service. There was failure on the part of each to communicate regularly over points of disagreement or problems where explanation was needed. There was fear of retaliation.

BROILER CONDEMNATION STUDIES IN LOUISIANA—A reduction in condemnations has been brought about by broiler growers doing a better job and a stabilization in the inspection service, according to Dr. J. M. Dixon, Louisiana State University.

He said that in September of 1960 a broiler condemnation study program was started with most of the producers and all of the inspected processing plants in the state of Louisiana.

Condemnations on the current Louisiana program are now at the following levels for postmortem: grower, 56%; processing plant, 19%; breeder hen, 17.5%; hatchery, 4%; catchers and haulers, 2%, and inspectors, 1.5%, he said.

His report showed antemortem condemnations are now at the following rates: hauler, 86%; processing plant, 9%, and breeder hen, 5%.

Dr. Dixon says that 28 flocks have been processed under this study with condemnations as follows: 17 flocks, less than 1%; nine flocks, 1.0-1.99%, and two flocks, 2.0% and over.

THE VALUE OF MEDICAMENTS IN THE PREVENTION AND CONTROL OF CRD AND AIR SAC—Surveys of condemnations show the definite value of good husbandry in reducing the loss due to air sac and CRD, stated Dr. M. S. Cover, University of Delaware, in his second appearance on the program.

He said that although the causative agent of CRD has been found and symptoms of the disease accurately described, there is no known cure or reliable prevention program for use by the industry.

"To understand the difficulty of treating air sac disease it is necessary to know that it is a complicated disease syndrome," he said. "The inciting agent, PPLO, produces an infection of the respiratory system and particularly the air sac which is almost always (under field conditions) followed by a secondary infection. In my opinion this secondary infection is the most important condition from an economic standpoint. The greatest difficulty in treating this condition (air sac) is the type or types of secondary invaders which are present. Thus the value of any medicament in treating cases of air sac will be measured in its ability to control the secondary infection.

"Although there has been considerable research into methods of prevention (including the production of PPLO-free chicks), there has been little encouraging information. A serological test has been devised which is accurate but at the moment has little practical application because of the mechanics of producing the replacement stock for the broiler industry. Antibiotic treatment of breeders and day-old chicks has been attempted and has in some cases shown benefit (not cure) but more often has failed or produced other complications. At the present moment an egg dipping technique using antibiotics shows promise but this needs considerable additional research before its applicability can be determined."

HUSBANDRY PRACTICES IN RELATION TO POULTRY CONDEMNATIONS—"To be of value in the reduction of condemnations in broilers, management practices must be a part of a coordinated program of environmental control and disease prevention," said R. T. Parkhurst, director, South Central Poultry Research Laboratory, Agricultural Research Service, State College, Miss.

He emphasized the importance of a financial incentive for the grower to do a better job. He said that a good sanitation program including a change of litter between broods seems economically justifiable.

And, he stated that chicks must be comfortable. "To be sure chickens get enough heat and fresh air, the poultryman must be on the job, especially during the winter months," he commented. "The failure to use additional heat, when needed, is one of the most frequent causes leading to high condemnations. This is especially true when heat is discontinued at too early an age."

Then, he said, "In times of trouble, an indifferent attitude on the part of the grower can be really serious. Early accurate diagnosis of a disease is important. The grower is the one who should first observe signs of disease and start action to control it.

"Although there are many things that still require research, a considerable reduction in condemnations is possible if broiler growers will do what they know they should do to grow good broilers."

DETAILS

(Continued from page 1)

if possible.

3. To help assure the consumer of fair and stable prices for meat, poultry and dairy products.

4. To reduce ultimate feed grain program costs to taxpayers by about $500 million.

PROGRAM IN GENERAL—Each producer decides voluntarily whether to cooperate. The program applies only to 1961 crops.

Corn and grain sorghums: The program applies to all field corn and grain sorghum whether for grain, fodder or silage.

20% acreage diversion: Cooperators will divert at least 20% of their 1959-60 average acreage of corn and grain sorghums to soil-conserving uses, and they may divert additional acreages.

Price supports and payments: In return, cooperators are eligible for price supports on corn and grain sorghums and for "an attractive" payment on each acre diverted. The payments will be in the form of negotiable certificates for which producers may receive grain or a cash equivalent of grain.

The national average support prices for feed grains are as follows: Corn, $1.20 bu.; grain sorghum, $1.93 cwt.; barley, 92¢ bu.; oats, 62¢ bu.; rye, $1.02 bu. Support prices will be established for each county.

Advance payments: Half of the estimated total payment for a farm will be offered to the producer as soon as he signifies that he will cooperate in the program.

No price support for non-cooperators: The non-cooperator will not be eligible for price support on corn, grain sorghum, oats, barley or rye of the 1961 crop.

As cooperators receive payments in the form of negotiable certificates which represent grain from Commodity Credit Corp. stocks, this grain becomes available for market and farm use in competition with grain from 1961 production.

It works like this: Cooperators who wish to receive the cash equivalent of grain at the support price may ask CCC to act as their agent in marketing their grain. As agent for the producer, CCC will advance the payment to the producer in cash through the county ASC office and subsequently market the grain.

(Also see accompanying story for additional interpretation of this phase of the program.)

The non-cooperator will get nothing but the market price, whatever it may be. The non-cooperator is not only ineligible for feed grain price support and payments but foregoes the usual price benefits of a production adjustment program as government stocks of grain are marketed.

Use of surplus: Through the payment-in-kind feature of the program, reduction in the acreage and production of corn and grain sorghums will be accompanied by a reduction of government stocks. These stocks are so large that, at the current rate of disposition, it would take CCC nine years to move them into use.

Thus, on a first-in first-out basis, grain acquired by the CCC from 1961 crops would be stored nine years before CCC could begin to dispose of it.

WHAT THE COOPERATOR DOES—To be a cooperator, the producer does the following:

1. Reduces his acreage of corn and grain sorghum below his 1959-60 base by a minimum of 20%, and he may elect to divert additional acreage within certain limits. Where the minimum amounts to less than 20 acres, the producer may elect to divert for payment either the actual computed minimum or up to 20 acres. If the farmer has a 1959-60 base of 20 to 100 acres he can divert as much as 20 acres plus 20% of his base. The producer who has 1959-60 average acreage of 100 acres or more may divert for payment as much as 20% more than the minimum 20%, making a total of 40%.

2. Devotes the diverted acreage to a conservation use and certifies that this is in addition to the 1959-60 average acreage devoted to a conservation use on the farm. Approved conservation uses of the diverted acres will vary by areas. In general, such uses include approved cover crops, trees, water storage and wildlife practices. The diverted acreage may not be harvested or pastured.

3. Controls weeds, insects and rodents.

Corn and grain sorghum producers who cooperate in the emergency feed grain program will be eligible for price support on their normal production from the acreage planted to these two crops, and for support on barley, oats and rye at the levels announced.

Producers of barley, oats and rye who do not produce corn or grain sorghum will be eligible for support on their 1961 production of these crops.

WHAT THE COOPERATOR RECEIVES — The cooperator receives the following benefits:

1. Price support on the normal production of his 1961 corn or grain sorghum acreage. The national average corn support price will be $1.20. In most counties the support price for corn will be about 14¢ bu. more than in 1960. The national average support price for grain sorghum is $1.93 cwt.—41¢ cwt. higher than in 1960.

2. Payment for each acre diverted to a conservation use. The payment rate per acre for the first 20% diverted will be established on this basis: 50% of the normal production of the acreage diverted X the county support price.

(For farms on which the base is less than 100 acres there may be additional diverted acres to which this rate applies.)

As an additional incentive, for an additional 20% of acreage diverted, the rate will be established on this basis: 60% of the normal production X the county support price.

Normal production for the purpose of making the payment will be calculated by adjusting the county average yield according to the productivity of the farm.

Example: Where the county support price for corn is $1.20 and a farm's normal production is 70 bu. per acre, the payment rate per acre for the first 20% diversion would be: 50% of 70 or 35 X $1.20 or $42.

County Agricultural Stabilization and Conservation offices will notify farmers of the rates to be used in making payments.

3. Advance of partial payment. The producer may be paid prior to "determination of performance" 50% of the total payment for which he will become eligible by carrying out the program. Wherever possible, these advance payments will be made at the time the producer signifies his intention of cooperating. This advance payment will help the producer meet his production expenses and is expected to be an important incentive for cooperation.

4. Effective protection in case of crop failure. The payment on the diverted acres is income regardless of what the weather does to crops, and this is a measure of income insurance. Price support for corn and grain sorghums at rates considerably above current market prices also has an income insurance effect.

WHAT THE NON-COOPERATOR MISSES — The non-cooperator will forego the benefits received by cooperators as follows:

1. He will **not** be eligible for price support on any feed grain (corn, grain sorghum, oats, barley, rye) of the 1961 crop. He will get only the market price, whatever it may be.

2. He will receive no payment under this special program.

MARKETS

(Continued from page 2)

dairy feed business is falling off due to an early spring and good pasture conditions. Sales of pig, chick and turkey starter feeds are not expanding as rapidly as hoped for.

Mills are operating on a five-day basis, but manufacturers complain of their inability to build up a satisfactory back-log of orders.

Ohio Valley

Sales of formula feeds maintained a steady but low-volume pace this week in the Ohio Valley with farmers obviously awaiting the institution of governmental rules and regulations in conformity with the signing by President Kennedy of the new feed grain legislation.

In view of the well advanced plowing and planting season in most valley areas, many feed manufacturers are expressing doubt that there will be any widespread rush by farmers to sign up for the financial benefits promised in the new law, although some eventual increase in sales of farm equipment is anticipated.

Meanwhile, feed manufacturers are reporting that the slight pickup in sales of chick, turkey starter and other feeds have been sufficient to require employment of a few more plant workers and the extension of employment to a full 40-hour week.

But it is emphasized that with the carry-over of considerable quantities of feeds on most valley farms, there is unlikely to be any sustained move to purchase large tonnages of manufactured feeds during the spring months.

Central States

The final week in March did not differ very materially from the first three insofar as trade in the formula feeds is concerned. Prices remain relatively strong. There has not been any letdown in the call for mixed feeds and, at the same time, neither was there any pickup to speak of.

Everything moving along on an even keel with the 40 hour week closely observed. There was some inclination in the part of constituent feeds, particularly millfeeds, to work lower, but on the other hand, the great strength in soybean meal fully offsets the easier trends in some of the others.

Mountain States

Some dealers report that the feed volume is down in this area due to the threat of government dumping of corn on the market. Market prices are weak but total feeding volume remains steady although somewhat lower than at this same time last year.

Other dealers report the feed business is beginning to pick up as contract feeders bring their cattle to feedlots. Cattle feeders have been holding back due to a depressed price market recently.

Turkey feeding is beginning to show signs of improvement in this area.

Pacific Northwest

Oregon, Washington and Idaho formula feed business was considered good this week, with poultry feed sales improved. Broiler and turkey mashes continue to set the pace while dairy feeds moved in fair volume as most area pastures were too wet for grazing.

Alfalfa hay trading continued at a slow pace during the period, and, although mild, warm weather and a great deal of moisture improved pastures, some lowland fields were reportedly too wet to provide maximum grazing.

Trade sources indicated that hay supplies were generally plentiful, but that good quality lots were limited in certain areas. Offerings by growers were not pressing as available markets easily satisfied current buying interests.

Pacific Northwest feed ingredient prices averaged higher at the close. A trading feature was another $5 a ton advance for 44% protein soybean meal along with continued strength in animal protein feeds during the period. Trading ranged from slow to moderately active, depending on the area and ingredients involved.

Dealers indicated the general activity was slightly improved from a week ago. Offerings of some important ingredients were on the tight side and the demand was mostly on a prompt delivery basis.

greater tonnage on their books. He added he looks for a continued sales rise next week.

Egg mashes continued to do well, and although the egg market has undergone subnormal Easter demand, growers have not reached the point yet where they will cull their flocks. Starting and growing feeds ranked third in sales. Broilers tagged along.

The egg market was a puzzle and offerings in some instances were burdensome. Broilers turned lower and prices eased ½¢ lb. in the East.

Corn dropped 6¢ under the weight of Commodity Credit Corp. offerings and if the flow continues it will exert pressure all along the ingredient line. Dairy ingredients, with the exception of soybean oil meal, slipped to the downside.

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TOP OF THE HOPPER

(Continued from page 2)

not in Washington, made his maiden speech in the House the other day, taking off very eloquently on the then-being-debated feed grain bill and in general opposition to controlled agriculture. His remarks drew commendation from fellow congressmen of similar economic faith, and they were noticed, too, by "the other side." Shortly afterwards an administration aide came around to his office to see how Ralph felt about some other administration-sponsored legislation. On some days politics can get as hot as the inside of a dehydrating drum, he's finding out.

♥ ♥

REP. WALTER JUDD (R., Minn.) hit a responsive note when he commented on the new feed grain bill at a Grain & Feed Dealers National Assn. convention session. "If you find out how to administer this bill, let me know. The farmer isn't happy with it, the feed men aren't, the taxpayers aren't and even the administration isn't," he said.

♥ ♥

IN THESE DAYS OF ADVICE to farmers from various sources on mixing feed from premixes or from the ground up, it is refreshing to note a recent University of Nebraska release. The university advises farmers to use a concentrate if they are going to mix feed which includes their own grains.

"The easiest way to mix a good poultry laying ration involves buying a good commercial concentrate and blending it with home grown feeds to make a complete ration with 16 to 17% protein," the news release tells farmers who have asked about mixing a laying ration.

"Modern laying rations are complex mixtures containing many ingredients," John Skinner, extension poultryman, reminds farmers. "Some of these ingredients are very difficult to obtain and require good equipment for mixing. Therefore, a commercial concentrate blended with home-grown grains is usually the most satisfactory arrangement. It is often very time consuming and uneconomical for the farmer to build a poultry ration from individual items."

Many feed men are using comments like this to help show farmers that mixing feed from the ground-up is not likely to be a sound practice.

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Lasting Immunity to Coccidiosis requires exposure *and* control!

The "PROTECTION TEAM" of CocciVac and a recommended coccidiostat, such as Trithiadol, assures *both!*

CocciVac, a coccidiosis vaccine, provides a measured exposure through vaccination ... Trithiadol, the superior, time-tested coccidiostat by Sterwin, protects while immunity is developing.

Sterwin Chemicals INC.
Subsidiary of Sterling Drug Inc.
1450 Broadway, New York 18, N.Y.

*While some growers use other coccidiostats with CocciVac, Trithiadol is recommended because of its proved efficiency with the CocciVac program.

CocciVac is the registered trademark of Dorn and Mitchell Laboratories, Inc.